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Please search claims

1 - 12.

Point of Contact:
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Technical Info. Specialist
CM1 12C14 Tel: 308-4994

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CPU time: _____
Total time: 30
Number of Searches: _____
Number of Databases: 1

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_____ Pre-S

Type of Search
_____ N.A. Sequence
_____ A.A. Sequence
_____ Structure
_____ Bibliographic

Vendors
_____ IG
✓ STN
_____ Dialog
_____ APS
_____ Geninfo
_____ SDC
_____ DARC/Questel
_____ Other

PTO-1590 (9-90)

12/08/99 Davenport 09/227400


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     FILE 'REGISTRY' ENTERED AT 09:43:56 ON 08 DEC 1999
                 E HUMAN COLLAGEN/CN 5
                 E PORCINE COLLAGEN/CN 5
                 E COLLAGEN/CN
L1           292 S COLLAGEN ?/CN
                 E ALBUMIN/CN 5
L2           144 S ALBUMIN ?/CN
                 E METHYLENE BLUE/CN 5
L3            21 S METHYLENE BLUE ?/CN

                 E GLUTARALDEHYDE/CN 5
L6             1 S E3
                 E GLUTAMATE/CN 5
L7             1 S E3
L8             2 S L6 OR L7

     FILE 'CAPLUS' ENTERED AT 09:48:49 ON 08 DEC 1999
L1           292 SEA FILE=REGISTRY ABB=ON  PLU=ON  COLLAGEN ?/CN
L2           144 SEA FILE=REGISTRY ABB=ON  PLU=ON  ALBUMIN ?/CN
L3            21 SEA FILE=REGISTRY ABB=ON  PLU=ON  METHYLENE BLUE ?/CN
L11         2002 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L1 OR (FIBROUS OR FIBRE
                 OR FIBER?)(3A)PROTEIN OR COLLAGEN) AND (L2 OR GLOBULAR(3A
                 )PROTEIN OR ALBUMIN)
L12            6 SEA FILE=CAPLUS ABB=ON  PLU=ON  L11 AND (L3 OR METHYLENE
                 BLUE)

L1           292 SEA FILE=REGISTRY ABB=ON  PLU=ON  COLLAGEN ?/CN
L2           144 SEA FILE=REGISTRY ABB=ON  PLU=ON  ALBUMIN ?/CN
L6             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  GLUTARALDEHYDE/CN
L7             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  GLUTAMATE/CN
L8             2 SEA FILE=REGISTRY ABB=ON  PLU=ON  L6 OR L7
L11         2002 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L1 OR (FIBROUS OR FIBRE
                 OR FIBER?)(3A)PROTEIN OR COLLAGEN) AND (L2 OR GLOBULAR(3A
                 )PROTEIN OR ALBUMIN)
L13         1380 SEA FILE=CAPLUS ABB=ON  PLU=ON  L11 AND (L8 OR GLUTARALDE
                 HYDE OR AMINO OR POLYPEPTIDE OR PEPTIDE OR POLYPROTEIN
                 OR PROTEIN OR GLUTAMATE)
L14           19 SEA FILE=CAPLUS ABB=ON  PLU=ON  L13 AND (TISSUE(S)ADHES?)

L15           22 L12 OR L14

=> d 1-22 .bevstr

L15  ANSWER 1 OF 22  CAPLUS  COPYRIGHT 1999 ACS
ACCESSION NUMBER:         1998:163488  CAPLUS
DOCUMENT NUMBER:          128:208937
TITLE:                    Fragmented polymeric hydrogels for adhesion
                          prevention and their preparation
INVENTOR(S):              Wallace, Donald G.; Reich, Cary J.; Shargill,
                             Searcher   :    Shears   308-4994
```

	Narinder S.; Vega, Felix; Osawa, A. Edward
PATENT ASSIGNEE(S):	Fusion Medical Technologies, Inc., USA
SOURCE:	PCT Int. Appl., 54 pp.
	CODEN: PIXXD2
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9808550	A1	19980305	WO 1997-US15262	19970814
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9742412	A1	19980319	AU 1997-42412	19970814
EP 927053	A1	19990707	EP 1997-940692	19970814
R: BE, CH, DE, ES, FR, GB, IT, LI, NL, IE				
PRIORITY APPLN. INFO.:			US 1996-704852	19960827
			US 1997-903674	19970731
			WO 1997-US15262	19970814

AB Mol. crosslinked gels comprise a variety of biol. and non-biol. polymers, such as **proteins**, polysaccharides, and synthetic polymers. Such mol. gels may be applied to target sites in a patient's body by extruding the gel through an orifice at the target site. Alternatively, the gels may be mech. disrupted and used in implantable articles, such as breast implants. When used in vivo, the compns. are useful for inhibiting post-surgical spinal and other **tissue adhesions**, for filling **tissue** divots, **tissue** tracts, body cavities, surgical defects, and the like. An example fragmented polymer product was prepd. from gelating, NaOH, Na periodate to give granules which were swollen, dried and resuspended in Na phosphate, and NaCl soln.

L15 ANSWER 2 OF 22 CAPLUS COPYRIGHT 1999 ACS

ACCESSION NUMBER:	1998:116159 CAPLUS
DOCUMENT NUMBER:	128:125589
TITLE:	**Collagen** binding activity determination for adhesion **proteins**, especially for the von Willebrand Factor (vWF)
INVENTOR(S):	Siekmann, Jurgen; Turecek, Peter; Schwarz, Hans-Peter; Eibl, Johann; Fischer, Bernhard Doz; Mitterer, Artur; Dorner, Friedrich

Searcher : Shears 308-4994

PATENT ASSIGNEE(S): Immuno A.-G., Austria
SOURCE: Eur. Pat. Appl., 40 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 816852	A1	19980107	EP 1997-890118	19970702
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
AT 9601190	A	19971015	AT 1996-1190	19960704
AT 403853	B	19980625		
AT 9602217	A	19971115	AT 1996-2217	19961218
AT 403963	B	19980727		
PRIORITY APPLN. INFO.:			AT 1996-1190	19960704
			AT 1996-2217	19961218

AB The invention concerns the description of a process and a kit for measuring **collagen** binding activity of adhesion **proteins** esp. that of the von Willebrand Factor (vWF), based on the binding of the **protein** to **collagen** that is covalently immobilized to a solid matrix and the subsequent detection by immunoassay. Analytes can be vWF, derivs. of vWF and Fibronectin of biol. origin or genetically engineered ones. Biol. origin can be blood, plasma, plasma fraction, cell culture or cell culture residue. The **collagen** or **collagen** deriv. used is typically Typ III **collagen** of human placenta and is either enzymically processed, or chem. modified by oxidn. at the oligosaccharide site to yield active aldehyde groups. **Collagen** can be immobilized to solid supports such as glass or any polymer of natural or synthetic origin used in prosthetic implants, artificial joints or in wound healing promoters; the support should contain a site to bind **collagen** in such a manner that the adhesion **protein** binding site of **collagen** is not affected by the immobilization. **Collagen** can also be immobilized via an antigen, a coenzyme or an antibody. To detect the bound adhesion **protein** various immunoassays can be applied, such as enzyme-, chromo-, luminescence-, fluorescence and RIA; addnl. detection methods are flow cytometry, aggregometry and light scattering. Preferred antibody used in the immunoassay is a monoclonal antibody against the functional epitope of the platelet binding site of the vWF. The lower limit of detection is 0.5-2 ng of vWF. The **collagen** -solid surface conjugate can be prepd. and stored after freeze drying. The kit contains the **collagen** conjugate in the form of a microtiter plate and the necessary chems. available com., such as anti vWF polyclonal POD-conjugate, POD substrate, buffers,

washing solns. and std. vWF.

IT **111-30-8**, **Glutaraldehyde**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(**collagen** binding activity detn. for adhesion **proteins**, esp. von Willebrand Factor in relation to the immobilization of **collagen** to the solid support)

L15 ANSWER 3 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1997:307561 CAPLUS
DOCUMENT NUMBER: 126:276430
TITLE: **Protein** for immobilization of culture substrata on carrier
INVENTOR(S): Tanno, Kazunobu; Manabe, Sachiko; Sasaki, Tetsuji
PATENT ASSIGNEE(S): Kyokuto Seiyaku Kogyo Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09056377	A2	19970304	JP 1995-217782	19950825

AB Culture substrata useful for animal **tissue** culture are immobilized on the carrier using **proteins** as **adhesives**. The immobilization of culture substrata prevents loss of the animal cell and/or tissue assocd. with agitation. The method uses nontoxic adhesives and does not require heating process. Immobilization of a microculture plate on a nitrocellulose carrier was shown.

L15 ANSWER 4 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1997:113413 CAPLUS
DOCUMENT NUMBER: 126:114823
TITLE: Crosslinkable polypeptide compositions and their use in delivery of biologically active agents to subjects
INVENTOR(S): Sojomihardjo, Soebianto A.; Desai, Neil P.; Sandford, Paul A.; Soon-shiong, Patrick; Nagrani, Shubhi
PATENT ASSIGNEE(S): Vivorx Pharmaceuticals, Inc., USA; Sojomihardjo, Soebianto, A.; Desai, Neil, P.; Sandford, Paul, A.; Soon-Shiong, Patrick; Nagrani, Shubhi
SOURCE: PCT Int. Appl., 57 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9640829	A1	19961219	WO 1996-US7424	19960521
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN				
AU 9658012	A1	19961230	AU 1996-58012	19960521
PRIORITY APPLN. INFO.:			US 1995-484724	19950607
			WO 1996-US7424	19960521

AB In accordance with the present invention, there are provided rapidly crosslinkable polypeptides which are obtained upon introduction of unsatd. group(s) into the polypeptide via linkage to amino acid residues on the polypeptide directly through one of three types of linkages, namely, an amide linkage, an ester linkage, or a thioester linkage. Each of these linkages are obtainable in a single step by use of a single derivatizing agent, acrylic anhydride. Also provided are methods for prepg. such modified polypeptides and various uses therefor. It has unexpectedly been found that proteins with the above-described chem. modifications have the ability to rapidly crosslink to themselves under suitable conditions. This crosslinking occurs in the absence of any external crosslinking agents (indeed, in the absence of any extraneous agents), resulting in the formation of a solid gel material. Solid crosslinked gels are formed in seconds, starting from a freely flowing soln. of polypeptide. Applications of such materials are broad ranging, including the encapsulation of living cells, the encapsulation of biol. ative materials, the in situ formation of degradable gels, the formation of wound dressings, the prevention of post-surgical adhesions, gene delivery, drug targetting, as a microcarrier for culture of living cells, and the like. **Albumin** was reacted with acrylic anhydride to produce a photopolymerizable **albumin** deriv. A soln. of this deriv., insulin, a free radical initiator (ethyl eosin), a cocatalyst (triethanolamine), and an accelerator (vinyl pyrrolidinone) was irradiated with an Hg lamp to encapsulate the insulin. Diabetic rats were injected with the encapsulated insulin. This compn. was able to maintain lower blood sugar for a longer period of time than the control, com. injectable insulin.

IT **61-73-4, Methylene blue**
RL: NUU (Nonbiological use, unclassified); USES (Uses)
(photosensitizer in photopolymn. of protein derivs.; crosslinkable polypeptide compns. and their use in delivery of

biol. active agents to subjects)

L15 ANSWER 5 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1997:31639 CAPLUS
DOCUMENT NUMBER: 126:72495
TITLE: Binding of human plasminogen and lactoferrin by Helicobacter pylori coccoid forms
AUTHOR(S): Khin, M. M.; Ringner, M.; Aleljung, P.; Wadstrom, T.; Ho, B.
CORPORATE SOURCE: Department Microbiology, National University Singapore, Singapore, 0511, Singapore
SOURCE: J. Med. Microbiol. (1996), 45(6), 433-439
CODEN: JMMIAV; ISSN: 0022-2615
PUBLISHER: Rapid Science Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The interactions of H. pylori spiral and coccoid forms with extracellular matrix (ECM) and plasma **proteins** were studied in an 125I-labeled **protein** assay. The range of binding of **collagen** V, plasminogen, human lactoferrin (HLf), and vitronectin to coccoid forms of H. pylori NCTC 11637 was 26-48%. In contrast, binding of radiolabeled fibronectin and **collagen** types I and III was low (3-8%). The coccoid forms of 14 strains of H. pylori showed significant HLf binding (median 26%). With plasminogen, no significant difference was found between binding to the coccoid (median = 13%) and spiral (median = 12%) forms, of 13 of the 14 strains of H. pylori tested; the exception was strain NCTC 11637. 125I-plasminogen showed a dose-dependent binding to both the coccoid and spiral forms. Plasminogen binding to both forms was specific; the binding was inhibited by nonlabeled plasminogen, plasmin, lysine, and .epsilon.-aminocaproic acid, but not by fetuin or various carbohydrates. Similarly, HLf binding was specific and was inhibited by non-labeled HLf and BLf. The coccoid forms showed either similar or enhanced ECM binding capabilities compared with the spiral forms. As the binding of ECM **proteins** may be an important mechanism of **tissue adhesion** for various pathogenic bacteria, the coccoid differentiated form of H. pylori can be considered as an infective form in the pathogenesis of Helicobacter infection and type B gastritis.

L15 ANSWER 6 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1996:717008 CAPLUS
DOCUMENT NUMBER: 126:16503
TITLE: Gels formed from water-soluble macromers modified with free radical-polymerizable groups for encapsulation of biological materials
INVENTOR(S): Hubbell, Jeffrey A.; Pathak, Chandrashekhar P.; Sawhney, Amarpreet S.; Desai, Neil P.;

	Hill-west, Jennifer L.; Hossainy, Syed F. A.
PATENT ASSIGNEE(S):	University of Texas System, USA
SOURCE:	U.S., 34 pp. Cont.-in-part of U.S. 5,529,914. CODEN: USXXAM
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	10

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5573934	A	19961112	US 1993-24657	19930301
US 5529914	A	19960625	US 1992-958870	19921007
US 5858746	A	19990112	US 1995-377911	19950125
US 5834274	A	19981110	US 1995-467693	19950606
US 5843743	A	19981201	US 1995-467815	19950606
PRIORITY APPLN. INFO.:			US 1992-870540	19920420
			US 1992-958870	19921007
			US 1990-598880	19901015
			US 1991-740632	19910805
			US 1991-740703	19910805
			US 1992-843485	19920228
			US 1993-24657	19930301

but not Collagen

AB Water sol. macromers are modified by addn. of free radical polymerizable groups, such as those contg. a carbon-carbon double or triple bond, which can be polymd. under mild conditions to encapsulate tissues, cells, or biol. active materials. The polymeric materials are particularly useful as **tissue adhesives**, coatings for **tissue** lumens including blood vessels, coatings for cells such as islets of Langerhans, coatings, plugs, supports or substrates for contact with biol. materials such as the body, and as drug delivery devices for biol. active mols. An ethyl eosin soln. was added to alginate-polylysine microcapsules contg. Islets of Langerhans, excess dye was washed away, PEG tetraacrylate soln. was added, and the PEG coat was formed by irradn. with an argon laser. The biocompatibility and permeability of such coatings were analyzed.

IT **61-73-4**, **Methylene blue**
RL: NUU (Nonbiological use, unclassified); USES (Uses)
(initiator; gels formed from water-sol. macromers modified with free radical-polymerizable groups for encapsulation of biol. materials)

L15 ANSWER 7 OF 22 CAPLUS COPYRIGHT 1999 ACS

ACCESSION NUMBER:	1996:467217 CAPLUS
DOCUMENT NUMBER:	125:137244
TITLE:	Gels for encapsulation of biological materials
INVENTOR(S):	Hubbell, Jeffrey A.; Pathak, Chandrashekhar P.; Sawhney, Amarpreet S.; Desai, Neil P.; Hossainy,

Syed F. A.
PATENT ASSIGNEE(S): University of Texas System, USA
SOURCE: U.S., 34 pp. Cont.-in-part of U.S. Ser. No. 870, 540.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 10
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5529914	A	19960625	US 1992-958870	19921007
US 5232984	A	19930803	US 1991-740632	19910805
US 5380536	A	19950110	US 1991-740703	19910805
WO 9316687	A1	19930902	WO 1993-US1776	19930301
W: AU, BB, BG, BR, CA, FI, HU, JP, KP, KR, LK, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SK, UA				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9337809	A1	19930913	AU 1993-37809	19930301
AU 683209	B2	19971106		
EP 627912	A1	19941214	EP 1993-907078	19930301
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 07506961	T2	19950803	JP 1993-515100	19930301
US 5573934	A	19961112	US 1993-24657	19930301
BR 9306041	A	19971118	BR 1993-6041	19930301
CA 2117584	C	19980922	CA 1993-2117584	19930301
US 5858746	A	19990112	US 1995-377911	19950125
US 5834274	A	19981110	US 1995-467693	19950606
US 5843743	A	19981201	US 1995-467815	19950606
US 5801033	A	19980901	US 1995-480678	19950607
PRIORITY APPLN. INFO.:			US 1990-598880	19901015
			US 1991-740632	19910805
			US 1991-740703	19910805
			US 1992-843485	19920228
			US 1992-870540	19920420
			US 1992-958870	19921007
			US 1993-24657	19930301
			WO 1993-US1776	19930301

AB This invention provides novel methods for the formation of biocompatible membranes around biol. materials using photopolymn. of water-sol. mols. The membranes can be used as a covering to encapsulate biol. materials or biomedical devices, as a ''glue'' to cause >1 biol. substance to adhere together, or as carriers for biol. active species. Several methods for forming these membranes are provided. Each of these methods utilizes a polymn. system contg. water-sol. macromers, species which are at once polymers and

macromols. capable of further polymn. The macromers are polymd. by using a photoinitiator (such as a dye), optionally a cocatalyst, optionally an accelerator, and radiation in the form of visible or long-wavelength UV light. The reaction occurs either by suspension polymn. or by interfacial polymn. The polymer membrane can be formed directly on the surface of the biol. material, or it can be formed on material which is already encapsulated.

IT **61-73-4**, **Methylene blue**
RL: CAT (Catalyst use); USES (Uses)
(gels for encapsulation of biol. materials)

L15 ANSWER 8 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1996:438064 CAPLUS
DOCUMENT NUMBER: 125:96223
TITLE: Biomaterial and method for obtaining it
INVENTOR(S): Dewez, Jean-Luc; Lhoest, Jean-Benoit; Detrait, Eric; Rouxhet, Paul; Bertrand, Patrick; Van Den Bosch De Agular, Philippe
PATENT ASSIGNEE(S): Universite Catholique De Louvain, Belg.
SOURCE: PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9615223	A1	19960523	WO 1995-BE104	19951114
W: CA, JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
BE 1008955	A3	19961001	BE 1994-1022	19941114
EP 800574	A1	19971015	EP 1995-937734	19951114
R: BE, DE, ES, FR, GB, IT				
US 5962136	A	19991005	US 1997-849067	19971003
PRIORITY APPLN. INFO.:			BE 1994-1022	19941114
			WO 1995-BE104	19951114

AB The present invention concerns a biomaterial for the selective **adhesion** of cell and/or **tissue**, which comprises a polymeric support having an heterogeneous surface conditioned with a surfactant and an extracellular matrix **protein** or a portion of said **protein**. The present invention concerns also the biosensor, the diagnostic device, the bioreactor, the tissue and the organ comprising the biomaterial according to the invention.

L15 ANSWER 9 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1996:431898 CAPLUS
Searcher : Shears 308-4994

DOCUMENT NUMBER: 125:138665
TITLE: Mechanisms of avidity modulation of integrin in mast cells
AUTHOR(S): Kinashi, Tatsuo; Wada, Ruri; Inaba, Masayo; Asaoka, Tetsuo; Takatsu, Kiyoshi
CORPORATE SOURCE: Dep. Immunology, Inst. Med. Science Univ., Tokyo, 108, Japan
SOURCE: Ensho (1996), 16(3), 163-169
CODEN: ENSHEE; ISSN: 0389-4290
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB Cell-cell and cell-matrix **adhesive** interactions mediated by integrins play crucial roles in leukocyte migration to inflamed **tissues**, and also in cell migration during embryogenesis. Mast cells are known to play a central role in regulating inflammatory responses of allergic and chronic immune diseases. The localization of mast cells in normal and inflamed tissues is therefore, an important regulatory process to influence intensity and duration of inflammatory responses. However, little is known about mechanisms that control localization of mast cells. Here adhesion of extracellular matrix **proteins** and mast cells stimulated with steel factor (stem cell factor, kit ligand) and FceRI crosslinking were examd. It showed that steel factor and FceRI crosslinking were potent stimulators of avidity of .beta.1 integrin VLA-5, which mediated a rapid and transient adhesion to fibronectin.

L15 ANSWER 10 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1994:292382 CAPLUS
DOCUMENT NUMBER: 120:292382
TITLE: Mapping the heparin-binding sites on type I **collagen** monomers and fibrils
AUTHOR(S): San Antonio, James D.; Lander, Arthur D.; Karnovsky, Morris J.; Slayter, Henry S.
CORPORATE SOURCE: Dep. Pathol., Harvard Med. Sch., Boston, MA, 02115, USA
SOURCE: J. Cell Biol. (1994), 125(5), 1179-88
CODEN: JCLBA3; ISSN: 0021-9525
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors used heparin, a structural and functional analog of heparan sulfate, as a probe to study the nature of the heparan sulfate proteoglycan-binding site on type I **collagen**. Affinity coelectrophoresis was used to study the binding of heparin to various forms of type I **collagen**, and electron microscopy visualized the site(s) of interaction of heparin with type I **collagen** monomers and fibrils. Using affinity coelectrophoresis it was found that heparin has similar affinities for both procollagen and **collagen** fibrils (K4's .apprx.

60-80 nM), suggesting that functionally similar heparin-binding sites exist in type I **collagen** independent of its aggregation state. Complexes of heparin-**albumin**-gold particles and procollagen were visualized by rotary shadowing and electron microscopy, and a preferred site of heparin binding was obsd. near the N-terminus of procollagen. Native or reconstituted type I **collagen** fibrils showed 1 region of significant heparin-gold binding within each 67-nm period, present near the division between the overlap and gap zones, within the a bands region. According to an accepted model of **collagen** fibril structure, the authors' data are consistent with the presence of a single preferred heparin-binding site near the N-terminus of the **collagen** monomer. Correlating these data with known type I **collagen** sequences, the authors suggest that the heparin-binding site in type I **collagen** may consist of a highly basic triple helical domain, including several **amino** acids known sometimes to function as disaccharide acceptor sites. The authors propose that the heparin-binding site of type I **collagen** may play a key role in cell **adhesion** and migration within connective **tissues**, or in the cell-directed assembly or restructuring of the collagenous extracellular matrix.

L15 ANSWER 11 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1994:280331 CAPLUS
DOCUMENT NUMBER: 120:280331
TITLE: Tissue bonding and sealing composition containing **proteins** and polysaccharides
INVENTOR(S): Bass, Lawrence S.; Libutti, Steven K.; Eaton, Alexander M.
PATENT ASSIGNEE(S): Trustees of Columbia University in the City of New York, USA
SOURCE: U.S., 13 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5292362	A	19940308	US 1991-727607	19910709
US 5209776	A	19930511	US 1990-560069	19900727
CA 2087957	AA	19920128	CA 1991-2087957	19910723
WO 9202238	A1	19920220	WO 1991-US5186	19910723
W: AU, BR, CA, FI, JP, KP, NO				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
AU 9184979	A1	19920302	AU 1991-84979	19910723

Searcher : Shears 308-4994

EP 542880	A1	19930526	EP 1991-915440	19910723
EP 542880	B1	19990825		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
JP 06507376	T2	19940825	JP 1991-514745	19910723
AT 183656	E	19990915	AT 1991-915440	19910723
PRIORITY APPLN. INFO.:			US 1990-560069	19900727
			US 1991-727607	19910709
			WO 1991-US5186	19910723

collagen ?

AB A compn. for bonding sepd. tissues together or for coating tissues or prosthetic materials contains at least one natural or synthetic **peptide** and at least one support material, such as polysaccharides, which may be activated by energy. Rat skin was trimmed into stirps and the edges of 2 strips brought into approxn. An adhesive mixt. contg. 5% human **albumin** 5% Na hyaluronate, and 0.5% indocyanine green was then topically applied and were exposed to laser light at a wavelength of 808 nm and energy output of 300-450 mW and power d. of 12 W/cm2. The mean tensile strength of the compn. was 441 as compared to 113 for 70% human fibrinogen as control.

IT **61-73-4**, **Methylene blue**
RL: BIOL (Biological study)
(**tissue adhesives** contg. **proteins** and polysaccharides and)

L15 ANSWER 12 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1994:49588 CAPLUS
DOCUMENT NUMBER: 120:49588
TITLE: Method for processing and preserving **collagen**-based tissues for transplantation
INVENTOR(S): Livesey, Stephen A.; Del Campo, Anthony A.; Nag, Abhijit; Nichols, Ken B.; Griffey, Edward S.; Coleman, Christopher
PATENT ASSIGNEE(S): Lifecell Corp., USA
SOURCE: Can. Pat. Appl., 63 pp.
CODEN: CPXXEB
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2089336	AA	19930813	CA 1993-2089336	19930211
CA 2051092	AA	19920313	CA 1991-2051092	19910910
AU 9183797	A1	19920319	AU 1991-83797	19910910
AU 650045	B2	19940609		
EP 475409	A2	19920318	EP 1991-115480	19910912
EP 475409	A3	19930901		

Searcher : Shears 308-4994

EP 475409	B1	19980415		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
AT 164981	E	19980515	AT 1991-115480	19910912
ES 2114868	T3	19980616	ES 1991-115480	19910912
US 5336616	A	19940809	US 1993-4752	19930202
AU 9332934	A1	19930819	AU 1993-32934	19930210
AU 668703	B2	19960516		
EP 564786	A2	19931013	EP 1993-102264	19930212
EP 564786	A3	19940706		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 06261933	A2	19940920	JP 1993-47373	19930212
US 5364756	A	19941115	US 1993-18357	19930216
AU 9467405	A1	19940922	AU 1994-67405	19940713
AU 677845	B2	19970508		
US 5780295	A	19980714	US 1996-752740	19961114
PRIORITY APPLN. INFO.:			US 1990-581584	19900912
			US 1991-709504	19910603
			US 1992-835138	19920212
			US 1993-4752	19930202
			US 1993-18357	19930216
			US 1994-291340	19940817

AB A method for processing and preserving an acellular **collagen**-based tissue matrix for transplantation is disclosed. The method includes the steps of processing biol. tissues with a stabilizing soln. to reduce procurement damage; treatment with a processing soln. to remove cells; treatment with a cryoprotectant soln. followed by freezing, drying, storage, and rehydration under conditions that preclude functionally significant damage; and reconstitution with viable cells. Skin for transplantation was processed and stored.

IT **111-30-8, Glutaraldehyde**
RL: BIOL (Biological study)
(in processing and preserving **collagen**-based tissues for transplantation)

L15 ANSWER 13 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1993:610747 CAPLUS
DOCUMENT NUMBER: 119:210747
TITLE: Gels for encapsulation of biological materials.
INVENTOR(S): Hubbell, Jeffrey A.; Pathak, Chandrashekhar P.; Sawhney, Amarpreet S.; Desai, Neil P.; Hill, Jennifer L.; Hossainy, Syed F. A.
PATENT ASSIGNEE(S): University of Texas System, USA
SOURCE: PCT Int. Appl., 77 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 10

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9316687	A1	19930902	WO 1993-US1776	19930301
W: AU, BB, BG, BR, CA, FI, HU, JP, KP, KR, LK, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SK, UA				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5529914	A	19960625	US 1992-958870	19921007
AU 9337809	A1	19930913	AU 1993-37809	19930301
AU 683209	B2	19971106		
EP 627912	A1	19941214	EP 1993-907078	19930301
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 07506961	T2	19950803	JP 1993-515100	19930301
BR 9306041	A	19971118	BR 1993-6041	19930301
PRIORITY APPLN. INFO.:			US 1992-843485	19920228
			US 1992-870540	19920420
			US 1992-958870	19921007
			US 1990-598880	19901015
			US 1991-740632	19910805
			US 1991-740703	19910805
			WO 1993-US1776	19930301

AB Water-sol. macromers are modified by addn. of free radical-polymerizable groups, such as those contg. a CC double or triple bond, which can be polymd. under mild conditions to encapsulate tissues, cells, or biol. active materials. The polymeric materials are particularly useful as **tissue adhesives**, coatings for **tissue** lumens, including blood vessels, coatings for cells, such as islets of Langerhans, coatings, plugs, supports or substrates for contact with biol. materials, and as drug delivery system. Human Langerhans islets were encapsulated in a PEG tetraacrylate macromer gel by interfacial polymn., using ethyl eosin initiator.

L15 ANSWER 14 OF 22 CAPLUS COPYRIGHT 1999 ACS

ACCESSION NUMBER: 1993:503268 CAPLUS

DOCUMENT NUMBER: 119:103268

TITLE: Measurement of cell adhesion and migration on **protein**-coated surfaces

AUTHOR(S): DiMilla, Paul A.; Stone, Julie A.; Albelda, Steven M.; Lauffenburger, Douglas A.; Quinn, John A.

CORPORATE SOURCE: Dep. Chem. Eng., Univ. Pennsylvania, Philadelphia, PA, 19104, USA

SOURCE: Mater. Res. Soc. Symp. Proc. (1992), 252(Tissue-Inducing Biomaterials), 205-12
CODEN: MRSPDH; ISSN: 0272-9172

Searcher : Shears 308-4994

DOCUMENT TYPE: Journal
LANGUAGE: English

AB The performance of biomaterials for in vivo and in vitro applications can depend critically on **tissue** cell **adhesion** and migration. Thus, the role that specific reversible interactions between cell adhesion receptors and complementary substratum-bound ligands play in the regulation of cell adhesion and migration was investigated. With an axisym. radial flow detachment assay (RFDA), cell-substratum adhesive strength for human smooth muscle cells (HSMCs) on surfaces coated with type IV **collagen** (CIV) was measured. The crit. shear stress for detachment increased linearly with increasing CIV coating concn. Using time-lapse videomicroscopy and image anal., the movement of individual HSMCs over similar CIV-coated surfaces was tracked. Cell speed and persistence were detd. for variations in CIV coating concn. by applying a persistent random walk model for individual cell movement. Cell speed reached a max. at an intermediate concn. of CIV, supporting the hypothesis that an optimal cell-substratum adhesiveness exists for HSMC movement. This combination of techniques for measuring adhesion and motility provides a valuable tool to examine the role of cell-biomaterial interactions on cell behavior.

L15 ANSWER 15 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1992:201178 CAPLUS
DOCUMENT NUMBER: 116:201178
TITLE: Tissue bonding and sealing composition and method of using the same
INVENTOR(S): Bass, Lawrence Samuel; Libutti, Steven Kenneth; Eaton, Alexander Mellon
PATENT ASSIGNEE(S): USA
SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9202238	A1	19920220	WO 1991-US5186	19910723
W: AU, BR, CA, FI, JP, KP, NO				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
US 5209776	A	19930511	US 1990-560069	19900727
US 5292362	A	19940308	US 1991-727607	19910709
AU 9184979	A1	19920302	AU 1991-84979	19910723
EP 542880	A1	19930526	EP 1991-915440	19910723
EP 542880	B1	19990825		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				

Searcher : Shears 308-4994

JP 06507376 T2 19940825 JP 1991-514745 19910723
PRIORITY APPLN. INFO.: US 1990-560069 19900727
US 1991-727607 19910709
WO 1991-US5186 19910723

AB An **adhesive** for bonding sepd. **tissues** together or for coating **tissues** or prosthetic materials comprises (a) .gtoreq.1 compd. selected from **peptides**, and (b) .gtoreq.1 compd. to support the first compd. to form a matrix, sol or gel. The compn. further comprises a chromophore to allow visualization of the compn. Energy or photons are applied to this compn. to enhance bonding, coating, or sealing of the tissue or prosthetic material. Radial artery and forearm vein were isolated in end-stage renal disease patients requiring arteriovenus fistula for vascular access for hemodialysis. Anastomoses were created between the artery and vein using a loop of Gortex graft. In one group of patients this was reinforced with a an adhesive compn. contg. 25% **albumin** and and 10mg/mL soln. of Na hyaluronate (1:2), with the addn. of fluorescein dye. The glue was sealed to the edge of the anastomosis and suture holes using a KTP laser. After unclamping, the blood leaking from the anastomosis was removed and measured. The total blood loss from the anastomosis was 14.7g as compared to 24.0g with controls without the adhesive compn.

IT **61-73-4**, **Methylene blue**
RL: DEV (Device component use); USES (Uses)
(**tissue adhesive** contg.)

L15 ANSWER 16 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1992:103315 CAPLUS
DOCUMENT NUMBER: 116:103315
TITLE: Adhesion, spreading, and proliferation of cells on **protein** carpets: effects of stability of a carpet
AUTHOR(S): Opas, Michal; Dziak, Ewa
CORPORATE SOURCE: Dep. Anat., Univ. Toronto, Toronto, ON, M5S 1A8, Can.
SOURCE: In Vitro Cell. Dev. Biol.: Anim. (1991), 27A(11), 878-85
CODEN: IVCAED; ISSN: 0883-8364
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The role that the phys. properties of substrata play in modulating the effects which components of extracellular matrix (ECM) exert on adhesion, spreading, and growth of retinal pigmented epithelial cells was studied. By simple modifications of conditions for **protein** adsorption on glass the authors obtained a set of substrata all coated with **proteins** of ECM (**protein** carpets) but with different phys. properties. By using these **protein** carpets the authors showed that their stability (desorption rate) in tissue culture conditions varies according to

the technique with which they were prepd. Therefore, the **protein** concn. or compn. or both may change with time in tissue culture depending on the technique used to prep. the carpet. In addn., efficacy of cell attachment to given **protein** may vary depending on whether a technique used to prep. the **protein** carpet involves denaturation of the **protein** . Adherent cells quickly remove (clear) weakly adsorbed **protein** carpets, and it seems that the carpet removal is a mech. process. During the carpet removal cells are rounded, which indicates that a spread cell phenotype normally assocd. with stress fibers and focal contacts occurs when the substratum is rigid enough to sustain cell traction. In addn., substrata lacking the rigidity to support the spread phenotype do not support cell proliferation either.

L15 ANSWER 17 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1988:184254 CAPLUS
DOCUMENT NUMBER: 108:184254
TITLE: Adhesive interactions and the metabolic activity of hepatocytes
AUTHOR(S): Hughes, R. Colin; Stamatoglou, Stamatis C.
CORPORATE SOURCE: Natl. Inst. Med. Res., London, NW7 1AA, UK
SOURCE: J. Cell Sci., Suppl. (1987), 8(Cell Behav.: Shape, Adhes., Motil.), 273-91
CODEN: JCSSEP; ISSN: 0269-3518
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB The nature and influence of adhesive interactions of rat hepatocytes with components of the extracellular matrix was studied in culture. Hepatocytes interact with different kinetics to substrata composed of **collagen** type IV, laminin, or fibronectin and adopt significantly different morphologies. The receptors mediating these various responses appear to be specific, according to the matrix, and in the case of fibronectin are complex, implicating several components of the hepatocyte surface. **Collagen** type IV maintains a differentiated phenotype more efficiently than fibronectin or laminin as measured by the prodn. of adult hepatocyte markers such as **albumin** and repression of .alpha.-fetoprotein synthesis. Formation of matrix components is also influenced by the substratum: synthesis and secretion of fibronectin or **collagen** type IV is down-regulated when cells are cultured on the homologous substratum. Hepatocytes cultured in vitro secrete components of the coagulation cascade and also mediate fibrinolysis on addn. of exogenous plasmin. The results are discussed in relation to the normal phenotype of the mature hepatocyte in vivo.

L15 ANSWER 18 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1986:597129 CAPLUS

DOCUMENT NUMBER: 105:197129
TITLE: Studies of endothelial cells adhesion to **glutaraldehyde** or carbodiimide crosslinked **proteins**
AUTHOR(S): Duval, J. L.; Sigot-Luizard, M. F.; Sigot, M.
CORPORATE SOURCE: Lab. Biol. Cell. Exp., UTC, Compiegne, 60206, Fr.
SOURCE: Adv. Biomater. (1986), 6(Biol. Biomech. Perf. Biomater.), 269-74
CODEN: ABIODQ; ISSN: 0272-3840
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The in vitro biocompatibility of Dacron vascular prostheses coated with **glutaraldehyde** (GTA) [**111-30-8**] or carbodiimide (CDI) [151-51-9]-crosslinked **albumin** and/or **collagen** was studied by evaluating the adhesion of endothelial cells. Adult cells (rat) were more sensitive to GTA than embryonic cells (chicken). CDI favored the migration of adult cells compared to GTA. Embryonic cells behaved the same with both agents. Max. cellular migration occurred on a **collagen** support although enzymic sensitivity to trypsin was highest. **Albumin-collagen** gave intermediate results for migration and sensitivity to trypsin, but the cellular migration was better compared to **albumin**. However, **albumin-collagen** support provided the best conditions for migration and **adhesion** of adult cells but exptl. conditions did not allow the cell **tissue** to reach the size large enough to resist to the dynamic flow. The adhesion process was dependent upon the cell no. whatever the nature of the support.

IT **111-30-8**
RL: BIOL (Biological study)
(**albumins** and **collagens** crosslinked by, for coating Dacron vascular prosthetics, endothelial cells adhesion to)

L15 ANSWER 19 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1986:66713 CAPLUS
DOCUMENT NUMBER: 104:66713
TITLE: Involvement of plasma membrane dipeptidyl peptidase IV in fibronectin-mediated adhesion of cells on **collagen**
AUTHOR(S): Hanski, Christoph; Huhle, Thomas; Reutter, Werner
CORPORATE SOURCE: Inst. Molekularbiol. Biochem., Freie Univ. Berlin, Berlin, D-1000/33, Fed. Rep. Ger.
SOURCE: Biol. Chem. Hoppe-Seyler (1985), 366(12), 1169-76
CODEN: BCHSEI
DOCUMENT TYPE: Journal

LANGUAGE: English

AB The role of dipeptidyl peptidase IV (I) in cell-matrix interaction of BHK cells and hepatocytes grown on **collagen**-coated surfaces was investigated by 3 different approaches. (1) Glass surfaces were derivatized with bovine serum **albumin**, which resulted in a cell-repulsing substratum. When it was further modified with Gly-Pro-Ala tripeptide, which is a substrate for I, BHK fibroblasts spread on it rapidly. The spreading could be inhibited by addn. of free Gly-Pro-Ala or other substrates of the enzyme as well as by an inhibitor **peptide** Val-Pro-Leu. It was not influenced by tripeptides which were neither substrates nor inhibitors of I. (2) The addn. of Gly-Pro-Ala to seeded cells slowed down the initial process of cell spreading on denatured **collagen** in the presence of fibronectin. The presence of both **collagen** and fibronectin was a necessary precondition for the spreading of cells in a manner sensitive to Gly-Pro-Ala. (3) Antiserum raised against mouse liver I added to the medium delayed the spreading of rat hepatocytes on denatured **collagen** in the presence of fibronectin in a manner similar to when Gly-Pro-Ala was added to the medium. Thus, plasma membrane I may be involved in the initial phase of fibronectin-mediated cell spreading on **collagen**.

L15 ANSWER 20 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1985:501206 CAPLUS
DOCUMENT NUMBER: 103:101206
TITLE: On the nature of Romanowsky-Giemsa staining and the Romanowsky-Giemsa effect. I. Model experiments on the specificity of Azure B-Eosine Y stain as compared with other thiazine dye-Eosine Y combinations
AUTHOR(S): Wittekind, D. H.; Gehring, T.
CORPORATE SOURCE: Inst. Anat., Univ. Freiburg, Freiburg/Br., 7800, Fed. Rep. Ger.
SOURCE: Histochem. J. (1985), 17(3), 263-89
CODEN: HISJAE; ISSN: 0018-2214
DOCUMENT TYPE: Journal
LANGUAGE: English

AB After incorporation into a polyacrylamide matrix, the biopolymers DNA, RNA, heparin, hyaluronic acid, **collagen**, and the synthetic polymers poly(U) and poly(A,U) were stained with the pure thiazine dyes **methylene blue**, the azures, and thionine alone and combined with Eosine Y. Satisfactory spectrophotometric agreement was obtained between the staining reactions of the biopolymers in the artificial matrix and those in their natural surroundings. This was esp. true with respect to the specificity of the Azure B-Eosine Y dye pair which is based on the generation, on suitable substrates of a purple color, the Romanowsky-Giemsa effect (RGE), with an absorbance max. near 550 nm.

In the model expts., DNA, heparin, hyaluronic acid, and **collagen** were found to be RGE pos. and poly(U), poly(A,U), and RNA RGE neg. The following theory of RGE is proposed which complies with new and earlier observations: after satn. of available anionic binding sites and aggregate formation by Azure B, electron donor-acceptor complexes are formed between Eosine Y and Azure B via H-bridge formation of the amino substituent H of Azure B and between Eosine Y and the biopolymer surface. Charge-transfer complex formation may also account for the qual. identity of Azure B-Eosine Y and Azure A-Eosine Y spectra of substrates which are colored purple. Quant., Azure A-Eosine Y is less efficient in giving RGE. The generation of RGE is time dependent. Equil. staining is attained after .apprx.120 h. The implications of the results for the biol. application of Romanowsky-Gimesa staining are discussed briefly.

IT **61-73-4**
RL: ANST (Analytical study)
(staining by, of biopolymers, Giemsa-Romanowsky effect in relation to)

L15 ANSWER 21 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1984:588998 CAPLUS
DOCUMENT NUMBER: 101:188998
TITLE: Manganese-dependent cell-substratum adhesion
AUTHOR(S): Grinnell, Frederick
CORPORATE SOURCE: Health Sci. Cent., Univ. Texas, Dallas, TX, 75235, USA
SOURCE: J. Cell Sci. (1984), 65, 61-72
CODEN: JNCSAI; ISSN: 0021-9533
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In the presence of Mn2+, baby hamster kidney cells attached and spread on substrata without added adhesion factors (e.g., fibronectin and lectins). This Mn2+-dependent adhesion occurred even when the substratum was coated with **proteins**, such as **albumin**, Hb, Ig, or ovalbumin, or a dried **collagen** film. Under similar conditions, cells without Mn2+ in Mg2+/Ca2+ contg. medium attached poorly and did not spread. Other divalent cations, including Mg2+, Ca2+, Fe2+, Co2+, and Ni2+, could not replace Mn2+. Cell surface sites required for Mn2+-dependent adhesion were destroyed by brief proteolytic treatment of the cells with trypsin or Pronase under conditions where the fibronectin receptor was unaffected. Also, addn. to the incubations of antibodies that inhibited ligand-mediated cell adhesion (e.g., by fibronectin or lectins) inhibited adhesion of cells in Mn2+-contg. medium and caused rounding of cells previously attached and spread in the presence of Mn2+. The continuous presence of Mn2+ was required for adhesion. Therefore, cells that were attached and spread in Mn2+-contg. medium and then switched to Mg2+/Ca2+-contg.

medium (which permitted cytoskeletal function) were found to round up and detach. In marked contrast, cells that were allowed to attach and spread on fibronectin-coated substrata in the presence of Mn2+ did not round up when they were switched to Mg2+/Ca2+-contg. medium. Possible explanations for Mn2+-dependent cell adhesion are discussed.

L15 ANSWER 22 OF 22 CAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1981:20424 CAPLUS
DOCUMENT NUMBER: 94:20424
TITLE: Biocompatible and blood-compatible materials
INVENTOR(S): Woodroof, Ernest Aubrey
PATENT ASSIGNEE(S): USA
SOURCE: Ger. Offen., 38 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3002038	A1	19800731	DE 1980-3002038	19800121
GB 2041377	A	19800910	GB 1980-821	19800110
GB 2041377	B2	19830928		
CA 1169358	A1	19840619	CA 1980-343792	19800116
NL 8000330	A	19800724	NL 1980-330	19800118
SE 8000449	A	19800723	SE 1980-449	19800121
SE 450869	B	19870810		
SE 450869	C	19871119		
BE 881275	A2	19800516	BE 1980-199057	19800122
DK 8000263	A	19800723	DK 1980-263	19800122
JP 55125870	A2	19800929	JP 1980-5338	19800122
JP 61037952	B4	19860826		
US 4725279	A	19880216	US 1985-738282	19850528

PRIORITY APPLN. INFO.: US 1979-5319 19790122

AB Bio- and blood-compatible materials contg. an activation agent/binder such as dodecylamine [124-22-1] plus a substrate such as cotton gauze or nylon net plus an activated surface-bound biol. component such as heparin [9005-49-6], **albumin**, Hb, or **amino** acids are described. The prepns. were tested for **adhesiveness** to rat eye surfaces with the textile side in contact with the **tissue**. Potential use in treatment of burns was presented.

(FILE 'CAPLUS' ENTERED AT 09:48:49 ON 08 DEC 1999)
L16 36 S L11 AND (CROSSLINK? OR CROSS LINK?)(3A)AGENT
L17 1 S L16 AND (TISSUE(S)ADHES?)
L18 0 S L17 NOT L15

Searcher : Shears 308-4994

(FILE 'MEDLINE, BIOSIS, EMBASE, LIFESCI, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS' ENTERED AT 09:54:13 ON 08 DEC 1999)
L19 71 S L15 OR L17
L20 42 DUP REM L19 (29 DUPLICATES REMOVED)

L20 ANSWER 1 OF 42 WPIDS COPYRIGHT 1999 DERWENT INFORMATION LTD
ACCESSION NUMBER: 1999-580278 [49] WPIDS
DOC. NO. CPI: C1999-168770
TITLE: Crosslinkable macromer systems for use in the preparation of matrices.
DERWENT CLASS: A11 A12 A14 A18 A35 A60 A96 B07 D22 E19
INVENTOR(S): ANDERSON, A B; CHUDZIK, S J
PATENT ASSIGNEE(S): (SURM-N) SURMODICS INC
COUNTRY COUNT: 22
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9947129	A1	19990923	(199949)*	EN	41

RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: AU CA JP MX

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9947129	A1	WO 1999-US5244	19990311

PRIORITY APPLN. INFO: US 1998-121248 19980723; US 1998-78607 19980319
AN 1999-580278 [49] WPIDS
AB WO 9947129 A UPAB: 19991124
NOVELTY - Crosslinkable macromer system comprising one or more polymers providing pendent polymerizable and pendent initiator groups and where the system is adapted for polymerization to form a matrix for in vivo application, is new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(1) a method of forming a polymeric matrix adapted for in vivo application, comprising applying the aforementioned macromer system to a substrate and cross-linking the system by free radical polymerization;
(2) a polymeric matrix adapted for in vivo application, consisting of the aforementioned macromer system which has been crosslinked by free radical polymerization.
USE - The matrix is used for cell immobilization, in the preparation of **tissue adhesives** and sealants, in

controlled drug delivery, as well as in situ device formation (e.g. in the preparation of three-dimensional bodies for implants). Polymeric matrices can also be used in wound dressing, **tissue** replacement/scaffolding, cellular encapsulation.

ADVANTAGE - The macromer system has advantages over the use of polymerizable macromers and separate, low molecular weight initiators e.g. optimal combination of non-toxicity, efficiency and solubility. A **collagen** scaffolding containing a bone morphogenic **protein** was prepared from a solution of liquid macromer consisting of polymerizable **collagen** (5 w/v%) plus photoderivatized polyacrylamide in phosphate buffered saline (pH 7.4) which was treated with bone morphogenic **protein** (BMP-7) (50 mu g/ml, 0.005 w/v%). Aliquots (150 mu l) of the above solution were placed in molds (8 mm diameter, 3 mm high) and were illuminated for 10 seconds with a Dymax lamp to solidify the **collagen** scaffolding. Control disks of solidified scaffolding were prepared via the same protocol, except that BMP-7 was not added. The scaffolding was evaluated for stimulation of bone growth in a rat cranial onlay implant model. When evaluated histologically, the scaffolding containing BMP-7 showed extensive bone formation in the space originally occupied by the **collagen** disk. The amount of bone that formed with the controls was less than 25% of that observed with the BMP-7-containing disks, thus demonstrating that the solidified **collagen** scaffolding greatly enhanced BMP-stimulated bone formation.

Dwg.0/0

L20 ANSWER 2 OF 42 WPIDS COPYRIGHT 1999 DERWENT INFORMATION LTD
ACCESSION NUMBER: 1999-458103 [38] WPIDS
CROSS REFERENCE: 1997-528795 [49]; 1998-132317 [13]; 1999-262677 [21]; 1999-443010 [37]; 1999-456895 [38]
DOC. NO. NON-CPI: N1999-342676
DOC. NO. CPI: C1999-134447
TITLE: Formation of coating on surface of medical device to prevent adverse biological reactions e.g. inflammation and thrombosis and increase device lifetime.
DERWENT CLASS: A11 A35 A96 B04 B07 D16 D22 P34
INVENTOR(S): KEOGH, J R
PATENT ASSIGNEE(S): (MEDT) MEDTRONIC INC
COUNTRY COUNT: 19
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9933499	A2	19990708	(199938)*	EN	25
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
US 5945319	A	19990831	(199942)		

Searcher : Shears 308-4994

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
WO 9933499	A2		WO 1998-US27825	19981230
US 5945319	A	CIP of	US 1996-635187	19960425
			US 1997-1994	19971231

FILING DETAILS:

PATENT NO	KIND		PATENT NO
US 5945319	A	CIP of	US 5821343

PRIORITY APPLN. INFO: US 1997-1994 19971231; US 1996-635187 19960425

AN 1999-458103 [38] WPIDS

CR 1997-528795 [49]; 1998-132317 [13]; 1999-262677 [21]; 1999-443010 [37]; 1999-456895 [38]

AB WO 9933499AN 2 UPAB: 19991014

NOVELTY - The method for forming a coating on a surface of a medical device, the coating imparting improved biocompatibility characteristics to the surface, the surface being suitable for contacting tissue, blood, and other bodily fluids in or temporarily removed from a living mammalian subject

DETAILED DESCRIPTION - A new method for forming a coating on a surface of a medical device, the coating imparting improved biocompatibility characteristics to the surface (suitable for contacting tissue, blood, and other bodily fluids in or temporarily removed from a living mammalian subject) comprising:

(a) combining a periodate with a biomolecule, especially comprising a 2-aminoalcohol moiety, the periodate oxidizing the 2-aminoalcohol moiety to form an aldehyde-functional material;

(b) providing the medical device, having a suitable biomaterial forming surface, an amine moiety being disposed on the surface;

(c) combining the aldehyde-functional material with the amine moiety to bond the aldehyde-functional material to the amine moiety to form an imine moiety; and

(d) reacting the imine moiety with a reducing agent to form an amine linkage, therefore immobilizing the biomolecule on the surface, to form the coating.

USE - The method is useful for covalently attaching a biomolecule to a substrate surface, especially for immobilizing a biomaterial on the surface of a medical device, especially a blood oxygenator, a blood pump, tubing for carrying blood, an endoprosthesis medical device, a vascular graft, a stent, a pacemaker lead, a heart valve, temporary intravascular medical device, a catheter and a guide wire (all claimed), tubular, sheet,

rod and articles of proper shape for use in a number of medical devices e.g. vascular grafts, aortic grafts, arterial, venous, or vascular tubing, vascular stents, dialysis membranes, tubing or connectors, blood oxygenator tubing or membranes, ultrafiltration membranes, intra-aortic balloons, blood bags, catheters, sutures, soft or hard **tissue** prostheses, synthetic prostheses, prosthetic heart valves, **tissue adhesives**, cardiac pacemaker leads, artificial organs, endotracheal tubes, lenses for eyes e.g. contact or intraocular lenses, blood handling equipment, apheresis equipment, diagnostic and monitoring, catheters and sensors, biosensors, dental devices, drug delivery systems, or bodily implants of any kind.

ADVANTAGE - The improved method is useful for developing surfaces that are less prone to promote the adverse biological reactions e.g. inflammation and thrombosis, therefore prolonging the useful lifetime of many medical devices.

Dwg.0/0

L20 ANSWER 3 OF 42 EMBASE COPYRIGHT 1999 ELSEVIER SCI. B.V.DUPLICATE 1

ACCESSION NUMBER: 1999370345 EMBASE

TITLE: Surface-immobilized biomolecules on **albumin** modified porcine pericardium for preventing thrombosis and calcification.

AUTHOR: Chandy T.; Das G.S.; Wilson R.F.; Rao G.H.R.

CORPORATE SOURCE: Dr. T. Chandy, Biomedical Engineering Institute, Cardiovascular Division, University of Minnesota, 420 Delaware Street SE, Minneapolis, MN 55455, United States. chando25@gold.tc.umn.edu

SOURCE: International Journal of Artificial Organs, (1999) 22/8 (547-558).
Refs: 39
ISSN: 0391-3988 CODEN: IJAODS

COUNTRY: Italy

DOCUMENT TYPE: Journal; Article

FILE SEGMENT:
018 Cardiovascular Diseases and Cardiovascular Surgery
026 Immunology, Serology and Transplantation
027 Biophysics, Bioengineering and Medical Instrumentation
025 Hematology
037 Drug Literature Index

LANGUAGE: English

SUMMARY LANGUAGE: English

AB The search for a noncalcifying **tissue** material to be used for valve replacement application continues to be a field of extensive investigation. A series of porcine pericardial membranes was prepared by modifying the **glutaraldehyde** - treated **tissues** with **albumin** and subsequently immobilizing bioactive molecules like PGE1, PGI2 or heparin via the carbodiimide

functionalities. The in vitro calcification and collagenase degradation of these modified **tissues** were studied as a function of exposure time. Furthermore, the biocompatibility aspects of such novel interfaces were established by platelet **adhesion** and fibrinogen adsorption. The results reported in this article propose that the treatment with antiplatelet agents such as **albumin**, heparin and prostaglandins (PGE1 or PGI2) change the surface conditioning of pericardial **tissues**, suggesting a possible role of deposited serum components in affecting mineralization process on bioprosthesis. Therefore, it is worthy to hypothesize that besides inhibiting the accumulation of calcium in the devitalized cells, the early formation of a conditioning layer on the bioprosthesis surface may affect salt precipitations, determining the propensity of the implant to calcify. More detailed studies are needed to understand the involvement of plasma **proteins** and cellular components of the recipient blood in **tissue**-associated calcification.

L20 ANSWER 4 OF 42 SCISEARCH COPYRIGHT 1999 ISI (R)
ACCESSION NUMBER: 1999:674873 SCISEARCH
THE GENUINE ARTICLE: 230KW
TITLE: Role of fibronectin during biological apatite crystal nucleation: Ultrastructural characterization
AUTHOR: Daculsi G (Reprint); Pilet P; Cottrel M; Guicheux G
CORPORATE SOURCE: FAC CHIRURG DENT, INSERM, CTR RECH MAT INTERET BIOL, BP 84215, F-44042 NANTES 1, FRANCE (Reprint)
COUNTRY OF AUTHOR: FRANCE
SOURCE: JOURNAL OF BIOMEDICAL MATERIALS RESEARCH, (NOV 1999) Vol. 47, No. 2, pp. 228-233.
Publisher: JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012.
ISSN: 0021-9304.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 21

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The role of **adhesion** molecules like osteopontin and bone sialoprotein, both containing the Arg-Gly-Asp sequence have been shown to have a role in mineral formation, whereas fibronectin (FN), another **adhesive protein**, was never studied during the mineralization processes. The formation and maturation of biological apatite crystals are under matrix control, and one of the roles of specific crystal **proteins** is to control the nucleation and growth of biological apatite during the mineralization process (promotion or inhibition). In the case of calcium phosphate ceramic used as a bone substitute, a dissolution-precipitation process occurs after implantation before the bone ingrowth and bone mineralization. The early precipitation

consists of common biological apatite crystals. These crystals are the result of secondary nucleation and a heteroepitaxic growth process on synthetic residual crystals. In in vivo studies, hydroxyapatite crystals were implanted subcutaneously into mice for 1 or 2 weeks. Fibronectin immunogold labeling of the newly formed crystals on surfaces of high-resolution transmission electron microscopy sections of retrieved implants revealed the close association of these precipitated crystals with FN. In in vitro experiments using a solution of human FN incubated in the presence of calcium phosphate crystals, we obtained apatite crystal precipitation. The fibronectin network observed in high-resolution transmission electron microscopy showed numerous clusters of very small particles (1 nm in diameter and 2 nm in length), whereas the same experiment realized as control on **albumin** revealed no crystal precipitation. These results demonstrate for the first time the role of FN in early biological crystal nucleation. This process could have important biological significance in accounting for ectopic calcification, primary nucleation in calcified **tissue**, and bone ingrowth on calcium phosphate ceramics. (C) 1999 John Wiley & Sons, Inc.

L20 ANSWER 5 OF 42 EMBASE COPYRIGHT 1999 ELSEVIER SCI. B.V.
ACCESSION NUMBER: 1999292778 EMBASE
TITLE: Expression of the polysialyltransferase ST8SiaIV: Polysialylation interferes with adhesion of PC12 cells in vitro.
AUTHOR: Horstkorte R.; Lessner N.; Gerardy-Schahn R.; Lucka L.; Danker K.; Reutter W.
CORPORATE SOURCE: R. Horstkorte, Inst. fur Molekularbiol./Biochemie, Freie Universitat Berlin, Arnimallee 22, D-14195 Berlin-Dahlem, Germany. rhorstko@zedat.fu-berlin.de
SOURCE: Experimental Cell Research, (10 Jan 1999) 246/1 (122-128).
Refs: 27
ISSN: 0014-4827 CODEN: ECREAL
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Addition of polysialic acid (PSA) to the neural cell **adhesion** molecule, NCAM, represents a unique posttranslational modification. Polysialylation of NCAM is developmentally regulated and associated with neural regeneration and plastic processes, as well as learning and memory. Two enzymes, the polysialyltransferases ST8SiaII and ST8SiaIV, are known to be involved in the polysialylation of NCAM. Both enzymes are individually capable of catalyzing polysialylation of NCAM, but their time of occurrence and their **tissue** expression are

different. In this study the influence of polysialylation on the nerve growth factor-induced differentiation of PC12 cells was investigated. For this purpose, PC12 cells, which endogenously express NCAM, were transfected with ST8SiaIV to produce, for the first time, a stable polysialylated PC12 cell. We demonstrate that integrin-dependent **adhesion** to **collagen** I is reduced in PSA-expressing PC12 cells. Furthermore, polysialylated cell membranes as matrix are a poor substrate for the **adhesion** and differentiation of PC12 cells, compared with normal cell membranes.

L20 ANSWER 6 OF 42 WPIDS COPYRIGHT 1999 DERWENT INFORMATION LTD
ACCESSION NUMBER: 1998-179181 [16] WPIDS
DOC. NO. NON-CPI: N1998-141746
DOC. NO. CPI: C1998-057568
TITLE: Fragmented crosslinked polymeric hydrogels - useful e.g. for preventing **tissue** **adhesion**, filling **tissue** and delivering bio-active substances.
DERWENT CLASS: A11 A14 A23 A25 A97 B04 D22 P34
INVENTOR(S): OSAWA, A E; REICH, C J; SHARGILL, N S; VEGA, F; WALLACE, D G; REICH, G J
PATENT ASSIGNEE(S): (FUSI-N) FUSION MEDICAL TECHNOLOGIES INC
COUNTRY COUNT: 78
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9808550	A1	19980305	(199816)*	EN	54
RW: AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW					
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW					
AU 9742412	A	19980319	(199831)		
EP 927053	A1	19990707	(199931)	EN	15
R: BE CH DE ES FR GB IE IT LI NL					

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9808550	A1	WO 1997-US15262	19970814
AU 9742412	A	AU 1997-42412	19970814
EP 927053	A1	EP 1997-940692	19970814
		WO 1997-US15262	19970814

FILING DETAILS:

Searcher : Shears 308-4994

PATENT NO	KIND		PATENT NO
AU 9742412	A	Based on	WO 9808550
EP 927053	A1	Based on	WO 9808550

PRIORITY APPLN. INFO: US 1997-903674 19970731; US 1996-704852 19960827
AN 1998-179181 [16] WPIDS
AB WO 9808550 A UPAB: 19990714
A fragmented polymeric composition comprises a biocompatible crosslinked hydrogel having a subunit size of 0.5-5 mm when fully hydrated, an equilibrium swell from 400-1300%, and an in-vivo degradation time of 1 day to 1 year in a moist tissue environment.

The crosslinked gel may comprise a crosslinked **protein** hydrogel e.g. gelatin, soluble **collagen**, **albumin**, haemoglobin, fibrogen, fibrin, casein, fibronectin, elastin, keratin and/or laminin; and/or crosslinked polysaccharide e.g. glycosaminoglycans, starch derivatives, cellulose derivatives, hemicellulose derivatives, xylan, agarose, alginate and/or chitosan; and/or crosslinked non-biological polymer e.g. polyacrylates, polymethacrylates, polyacrylamides, polyvinyl resins, polylactide-glycolides, polycaprolactones and/or polyoxyethylenes.

USE - The compositions are useful for sealing a tissue tract, inhibiting bleeding, delivering bioactive substance in a patient's body, and delivering swellable compositions to a target site in tissue e.g. muscle, skin, epithelial tissue, connective or supporting tissue, nerve tissue, opthalmic and other sense organ tissue, vascular and cardiac tissue, gastrointestinal organs and tissue, kidney, endocrine glands, male and female reproductive organs, adipose tissue, liver, pancreas, lymph, cartilage, bone, oral tissue, mucosal tissue, and spleen other abdominal organs (all claimed).

Dwg.0/5

L20 ANSWER 7 OF 42 WPIDS COPYRIGHT 1999 DERWENT INFORMATION LTD
ACCESSION NUMBER: 1998-008590 [01] WPIDS
DOC. NO. NON-CPI: N1998-006789
DOC. NO. CPI: C1998-003008
TITLE: Rapidly sealing fluid leaks in tissues - by applying polymerisable **protein** on tissue and exposing to initiator to polymerise obtained covering in situ, used to seal e.g. air-holes in lung injuries.
DERWENT CLASS: A96 B04 D22 P34
INVENTOR(S): DEVORE, D P; PACHENCE, J M; PUTNAM, C
PATENT ASSIGNEE(S): (BRDC) BARD INC C R
COUNTRY COUNT: 21
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9742986	A1	19971120	(199801)*	EN	28
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
W: CA JP US					
EP 901383	A1	19990317	(199915)	EN	
R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9742986	A1	WO 1997-US8124	19970514
EP 901383	A1	EP 1997-925559	19970514
		WO 1997-US8124	19970514

FILING DETAILS:

PATENT NO	KIND		PATENT NO
EP 901383	A1	Based on	WO 9742986

PRIORITY APPLN. INFO: US 1996-670190 19960514

AN 1998-008590 [01] WPIDS

AB WO 9742986 A UPAB: 19980107

Sealing a fluid leak in a tissue comprises (a) applying a polymerisable **protein** on the tissue to form a covering for an opening that creates a fluid leak in the tissue; and (b) exposing the covering to an initiator to polymerise the covering in situ, so that the covering is attached to the tissue and the opening is sealed to prevent fluid leakage.

The polymerisation is preferably effected in 10-30 (preferably 15) seconds and in a viscous fluid maintained at pH 8.2-8.5. The polymerisable **protein** is applied on the tissue as a viscous fluid, which includes an initiator. The polymerisable **protein** is derivatised and comprises **collagen**, **albumin**, gelatine, elastin or fibrinogen. The polymerisable **protein** is derivatised **collagen**, preferably comprising a reaction product of **collagen** with an acylating or sulphonating agent. The initiator is sodium persulphate or thiosulphate, ferrous chloride tetrahydrate, sodium bisulphite or an oxidative enzyme. The initiator is sodium persulphate present in an amount of 0.01-0.2M, final concentration. The tissue is blood vessel, lung, bowel or dura tissue, preferably lung or blood vessel tissue. The covering is polymerised in situ using irradiation, preferably using a light band with a wavelength of 250-550 nm.

USE - The process is used to rapidly seal fluid leaks in tissues e.g. to seal airholes in lung injuries, including injuries

to parenchymal and bronchiole tissues (especially bronchiole stumps) and to seal anastomoses and suture lines for blood vessels. The process may also be used to seal leakage in the bladder, bowel and dura mater.

ADVANTAGE - Leaks can be sealed quickly, in < 30 seconds. Leaks can be exposed immediately to elevated pressures of at least 50 mmHg and to pulsating fluid, particularly at high pressures. The process allows substantial gaps in **tissues** to be plugged as opposed to **adhesively** binding **tissues** in contact with one another. Body fluids can be sealed in body conduits.
Dwg.0/0

L20 ANSWER 8 OF 42 EMBASE COPYRIGHT 1999 ELSEVIER SCI. B.V.
ACCESSION NUMBER: 97314984 EMBASE
DOCUMENT NUMBER: 1997314984
TITLE: XIVth meeting, International Congress of Nephrology: Sydney, Australia, May 25-29, 1997.
AUTHOR: Roberts M.
CORPORATE SOURCE: Dr. M. Roberts, Roberts' Enterprises, Sepulveda, CA, United States
SOURCE: Dialysis and Transplantation, (1997) 26/10 (679-686).
ISSN: 0090-2934 CODEN: DLTPAE
COUNTRY: United States
DOCUMENT TYPE: Journal; Conference Article
FILE SEGMENT: 026 Immunology, Serology and Transplantation
027 Biophysics, Bioengineering and Medical Instrumentation
028 Urology and Nephrology
036 Health Policy, Economics and Management
037 Drug Literature Index
LANGUAGE: English

L20 ANSWER 9 OF 42 EMBASE COPYRIGHT 1999 ELSEVIER SCI. B.V.
ACCESSION NUMBER: 97145341 EMBASE
DOCUMENT NUMBER: 1997145341
TITLE: Cysteinyl leukotrienes induce P-selectin expression in human endothelial cells via a non-CysLT1 receptor-mediated mechanism.
AUTHOR: Pedersen K.E.; Bochner B.S.; Undem B.J.
CORPORATE SOURCE: Dr. B.J. Undem, Johns Hopkins Asthma/Allergy Center, 5501 Hopkins Bayview Circle, Baltimore, MD 21224, United States
SOURCE: Journal of Pharmacology and Experimental Therapeutics, (1997) 281/2 (655-662).
Refs: 45
ISSN: 0022-3565 CODEN: JPETAB
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 026 Immunology, Serology and Transplantation

030 Pharmacology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Cysteinyl leukotrienes are bioactive lipid mediators known to possess potent proinflammatory actions included in these are effects on vascular endothelium to promote surface expression of the **adhesion** molecule P- selectin. In the present study we were interested in investigating the receptor mechanism(s) involved in cysteinyl leukotriene-induced endothelial P-selectin expression. As such we examined the effect of several potent and selective cysteinyl leukotriene receptor antagonists on this response. Incubation of cultured human umbilical vein endothelial cells (HUVEC) with the cysteinyl leukotrienes leukotriene C4 (LTC4) or leukotriene D4 (LTD4) induced surface expression of P-selectin which was concentration dependent and rapid in onset. Expression of endothelial P-selectin induced by either LTC4 or LTD4 was not blocked however by pretreatment of HUVEC with the selective cysteinyl leukotriene-1 (CysLT1) receptor antagonists SKF 104353, pranlukast or zafirlukast before agonist exposure. In contrast, SKF 104353 effectively antagonized the LTC4-induced contractions in isolated human bronchial smooth muscle preparations, shifting the agonist dose-response curve to the right by some 3 log-fold in this **tissue**. The present results suggest that cysteinyl leukotrienes induce surface expression of endothelial P-selectin via a mechanism independent of the CysLT1 receptor.

L20 ANSWER 10 OF 42 EMBASE COPYRIGHT 1999 ELSEVIER SCI. B.V.
ACCESSION NUMBER: 97376600 EMBASE
DOCUMENT NUMBER: 1997376600
TITLE: Dye-enhanced **protein** solders and patches in laser-assisted tissue welding.
AUTHOR: Small IV W.; Heredia N.J.; Maitland D.J.; Da Silva L.B.; Matthews D.L.
CORPORATE SOURCE: W. Small IV, Lawrence Livermore Natl. Laboratory, L 399, P.O. Box 808, Livermore, CA 94550, United States
SOURCE: Journal of Clinical Laser Medicine and Surgery, (1997) 15/5 (205-208).
Refs: 13
ISSN: 1044-5471 CODEN: JCLSEO
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 009 Surgery
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Objective: This study examines the use of dye-enhanced **protein** bonding agents in 805 nm diode laser-assisted tissue welding. A comparison of an **albumin** liquid solder and **collagen** solid-matrix patches used to repair arteriotomies

in an in vitro porcine model is presented. Summary background data: Extrinsic bonding media in the form of solders and patches have been used to enhance the practice of laser tissue welding. Preferential absorption of the laser wavelength has been achieved by the incorporation of chromophores. Methods: Both the solder and the patch included indocyanine green dye (ICG) to absorb the 805 nm continuous-wave diode laser light used to perform the welds. Solder-mediated welds were divided into two groups (high power/short exposure and low power/long exposure), and the patches were divided into three thickness groups ranging from 0.1 to 1.3 min. The power used to activate the patches was constant, but the exposure time was increased with patch thickness. Results: Burst pressure results indicated that solder-mediated and patched welds yielded similar average burst strengths in most cases, but the patches provided a higher success rate (i.e., more often exceeded 150 mmHg) and were more consistent (i.e., smaller standard deviation) than the solder. The strongest welds were obtained using 1.0-1.3 mm thick patches, while the high power/short exposure solder group was the weakest. Conclusions: Though the solder and patches yielded similar acute weld strengths, the solid-matrix patches facilitated the welding process and provided consistently strung welds. The material properties of the extrinsic agents influenced their performance.

L20 ANSWER 11 OF 42 MEDLINE DUPLICATE 2
ACCESSION NUMBER: 96414044 MEDLINE
DOCUMENT NUMBER: 96414044
TITLE: Effect of glycated **collagen** on proliferation of human smooth muscle cells in vitro.
AUTHOR: Iino K; Yoshinari M; Yamamoto M; Kaku K; Doi Y; Ichikawa K; Iwase M; Fujishima M
CORPORATE SOURCE: Second Department of Internal Medicine, Faculty of Medicine, Kyusyu University, Fukuoka, Japan.
SOURCE: DIABETOLOGIA, (1996 Jul) 39 (7) 800-6.
Journal code: E93. ISSN: 0012-186X.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199702
ENTRY WEEK: 19970204
AB While non-enzymatic glycation of long-lived **tissue proteins** such as **collagen** has been implicated in chronic complications of diabetes mellitus, its role in the aetiology of diabetic macroangiopathy has not been elucidated. To test the hypothesis that glycation of **collagen** abolishes the inhibitory effect of native **collagen** on the proliferation of human smooth muscle cells, we obtained smooth muscle cells from human gastric arteries and cultured them on dishes coated with glycated or non-glycated **collagen**. The

proliferation of human smooth muscle cells in the presence of 10% fetal calf serum or platelet derived growth factor-BB (10 ng/ml) was inhibited by type 1 **collagen** coated on the dishes. Glycation of **collagen** with glucose 6-phosphate for 7 days abolished the growth-inhibitory effect of native **collagen**. Succinylation of **collagen**, which like glycation blocked the lysyl residues in **collagen**, also abolished the growth-inhibitory effect. **Adhesion** of human smooth muscle cells to **collagen**-coated dishes was not affected by glycation of **collagen**. Addition of glycated **albumin** to the medium did not affect the growth of human smooth muscle cells on plastic dishes. The inhibition of human smooth muscle cell proliferation by **collagen** was not reversed by the glycation of **collagen** in the presence of aminoguanidine. Results suggest that early glycation abolishes the inhibitory effect of **collagen** on human smooth muscle cell proliferation and may thus participate in the progression of macro-angiopathy in diabetes.

L20 ANSWER 12 OF 42 MEDLINE
ACCESSION NUMBER: 97117177 MEDLINE
DOCUMENT NUMBER: 97117177
TITLE: Binding of human plasminogen and lactoferrin by Helicobacter pylori coccoid forms.
AUTHOR: Khin M M; Ringner M; Aleljung P; Wadstrom T; Ho B
CORPORATE SOURCE: Department of Microbiology, National University of Singapore.
SOURCE: JOURNAL OF MEDICAL MICROBIOLOGY, (1996 Dec) 45 (6) 433-9.
Journal code: J2N. ISSN: 0022-2615.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199703
ENTRY WEEK: 19970302

AB The interactions between Helicobacter pylori spiral and coccoid forms, extracellular matrix (ECM) and plasma **proteins** were studied in an 125I-labelled **protein** assay. The range of binding of **collagen** V, plasminogen, human lactoferrin (HLf) and vitronectin to coccoid forms of H. pylori NCTC 11637 was 26-48%. In contrast, binding of radiolabelled fibronectin and **collagen** types I and III was low (3-8%). The coccoid forms of 14 strains of H. pylori showed significant HLf binding (median 26%). With plasminogen, no significant difference was found between binding to the coccoid (median = 13%) and spiral (median = 12%) forms, of 13 of the 14 strains of H. pylori tested; the exception was strain NCTC 11637. 125I-plasminogen showed a dose-dependent binding to both the coccoid and spiral forms. Plasminogen binding to

both forms was specific; the binding was inhibited by non-labelled plasminogen, plasmin, lysine, EACA (epsilon-aminocaproic acid) but not by fetuin or various carbohydrates. Similarly, HLf binding was found to be specific and was inhibited by non-labelled HLf and BLf. The coccoid forms showed either similar or enhanced ECM binding capabilities compared with the spiral forms. As the binding of ECM **proteins** may be an important mechanism of **tissue adhesion** for various pathogenic bacteria, the coccoid differentiated form of H. pylori can be considered as an infective form in the pathogenesis of helicobacter infection and type B gastritis.

L20 ANSWER 13 OF 42 MEDLINE DUPLICATE 3
ACCESSION NUMBER: 96365492 MEDLINE
DOCUMENT NUMBER: 96365492
TITLE: Extracellular matrix in tooth cementum and mantle dentin: localization of osteopontin and other noncollagenous **proteins**, plasma **proteins**, and glycoconjugates by electron microscopy.
AUTHOR: McKee M D; Zalzal S; Nanci A
CORPORATE SOURCE: Department of Stomatology, Faculty of Dentistry, Universite de Montreal, Quebec, Canada.
SOURCE: ANATOMICAL RECORD, (1996 Jun) 245 (2) 293-312. Journal code: 4QM. ISSN: 0003-276X.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199612
AB BACKGROUND: Noncollagenous **proteins** (NCPs) are considered to have multiple functions related to the formation, turnover, and repair of the **collagen**-based mineralized **tissues**. Collectively, they comprise a class of generally acidic, mineral-binding **proteins** showing extensive posttranslational modifications, including glycosylation, phosphorylation, and sulfation. METHODS. We have used colloidal-gold immunocytochemistry and lectin-gold cytochemistry, together with transmission electron microscopy, to examine the organic matrix composition of tooth cementum and the subjacent mantle dentin in rodent molar teeth. Molars were processed for immunocytochemistry using antibodies against osteopontin (OPN), osteocalcin (OC), bone sialoprotein (BSP), bone acidic glycoprotein-75 (BAG-75), **albumin** (ALB), and alpha 2HS-glycoprotein (alpha 2HS-GP), or for glycoconjugate cytochemistry using lectin-gold complexes. RESULTS: Ultrastructurally, at the advancing root edge in developing molars, OPN and BSP initially were associated with small calcification foci in the mantle dentin. With progressing mineralization, OC and alpha 2HS-GP appeared diffusely distributed

throughout the calcified mantle dentin, and diminished as a gradient toward the circumpulpal dentin. Immediately following disruption of Hertwig's epithelial root sheath, cementum deposition commenced at the root surface occasionally with the appearance of a cement line rich in OPN. Cementum matrix proper contained abundant OPN, BSP, OC, and alpha 2HS-GP, but no or little BAG-75 or ALB. **Protein** immunolabeling, as well as lectin labeling for beta-D-galactose and N-acetyl-neuraminic acid and/or N-glycolyl-neuraminic acid, both being prominent sugars of certain NCPs, was primarily concentrated between, and at the surface of, **collagen** fibrils in acellular extrinsic fiber cementum. OPN, BSP, OC, and alpha 2HS-GP were also prominent components of cellular cementum and of Sharpey's fibers. In cellular cementum, laminae limitantes sometimes present delimiting cementocyte lacunae and cell process-containing canaliculi were also rich in OPN. Along the root surface, occasional cementoblasts exhibited intracellular labeling for OPN over the Golgi apparatus and secretory granules. CONCLUSIONS: We have identified OPN, BSP, OC, and alpha 2HS-GP as being prominent organic constituents of both mantle dentin and acellular and cellular cementum, and, have elucidated the details of their distribution at the ultrastructural level. The temporal appearance and spatial distribution of these organic moieties in the teeth root are similar to those seen during bone formation and are consistent with proposals that certain NCPs may be involved in regulating calcification and/or participating in cell-matrix and matrix-matrix/mineral **adhesion** events.

L20 ANSWER 14 OF 42 EMBASE COPYRIGHT 1999 ELSEVIER SCI. B.V.
ACCESSION NUMBER: 95158362 EMBASE
DOCUMENT NUMBER: 1995158362
TITLE: Human skin mast cells express functional .beta.1 integrins that mediate adhesion to extracellular matrix **proteins**.
AUTHOR: Columbo M.; Bochner B.S.; Marone G.
CORPORATE SOURCE: Cattedra de Immunologia Clinica, Facolta di Medicina e Chirurgia, Universita de Napoli Frederico II, Via S Pansini 5,80131 Napoli, Italy
SOURCE: Journal of Immunology, (1995) 154/11 (6058-6064). ISSN: 0022-1767 CODEN: JOIMA3
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 026 Immunology, Serology and Transplantation
029 Clinical Biochemistry
030 Pharmacology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English
AB We have evaluated the **adhesion** of human cutaneous mast cells to several components of the extracellular matrix (plasma

fibronectin, laminin, **collagen** type I and IV) and studied whether these cells express the .beta.1 integrins potentially involved in the **adhesion** to these **proteins**. Human skin mast cells (5.1 .+-. 1.5% pure) spontaneously adhered to fibronectin and laminin (0.1 to 10 .mu.g/ml) immobilized on plastic surfaces (e.g., 14 .+-. 7.2% and 14 .+-. 4.4% **adhesion** at 10 .mu.g/ml, respectively). Similar results were obtained with a 90% pure mast cell preparation. In contrast, cutaneous mast cells did not adhere to **collagen** type I (1.6 .+-. 0.5% **adhesion**) or type IV (1.2 .+-. 0.8% **adhesion**). Control **adhesion** in BSA-coated wells was <5%. Mast cell **adhesion** to fibronectin was optimal after an incubation period of 60 to 90 min (t(1/2) = 28.2 .+-. 6.2 min), whereas **adhesion** to laminin was faster (t(1/2) = 10.1 .+-. 1.2 min), being nearly optimal after a 15-min incubation period. Human skin mast cell **adhesion** to fibronectin and laminin was found to be dependent on the presence of divalent cations in the extracellular medium. Dual-color immunofluorescence and flow cytometry were used to evaluate whether human skin mast cells (51.3 .+-. 3.9% pure) express .beta.1 integrins that may mediate cell **adhesion** to extracellular matrix **proteins**. These mast cells were found to express VLA (very late Ag)-3 (75.3 .+-. 35.6 specific fluorescence intensity) and, to lesser degree, VLA-4 and VLA-5 receptors (8.0 .+-. 2.5 and 6.9 .+-. 3.2 specific fluorescence intensity, respectively). In contrast, VLA- 1, VLA-2, and VLA-6 integrins were not expressed significantly. mAb to VLA- 3, VLA-4, and VLA-5 each inhibited by 70% skin mast cell **adhesion** to fibronectin. mAb to VLA-3 nearly abolished mast cells **adhesion** to laminin, whereas anti-VLA-4 and anti-VLA-5 were ineffective. Finally, immunosuppressant cyclosporin A (100 nM) and FK-506 (10 nM) significantly inhibited mast cell **adhesion** to both fibronectin and laminin ($p < 0.05$). Our data demonstrate that human skin mast cells spontaneously adhere to fibronectin and laminin, and that this **adhesion** is mediated by VLA-3, VLA-4, and/or VLA-5 integrins on these cells. Interactions between these .beta.1 integrins and extracellular matrix **proteins** may be involved in perivascular **tissue** localization of human mast cells in vivo.

L20 ANSWER 15 OF 42 BIOSIS COPYRIGHT 1999 BIOSIS
ACCESSION NUMBER: 1996:70473 BIOSIS
DOCUMENT NUMBER: PREV199698642608
TITLE: Ultrastructural immunodetection of osteopontin and osteocalcin as major matrix components of renal calculi.
AUTHOR(S): McKee, M. D. (1); Nanci, A.; Khan, S. R.
CORPORATE SOURCE: (1) Dent./Stomatol., Univ. Montreal, P.O. Box 6128, Station Centre-Ville, Montreal, PQ H3C 3J7 Canada
SOURCE: Journal of Bone and Mineral Research, (1995) Vol. 10,

No. 12, pp. 1913-1929.
ISSN: 0884-0431.
DOCUMENT TYPE: Article
LANGUAGE: English

AB The organic matrix of renal calculi has long been considered to influence the crystal growth that occurs in these pathological mineral deposits. Recent advances in characterizing individual organic moieties from mineralized **tissues** in general and the combined use of antibodies raised against these molecules with different immunocytochemical approaches have allowed their precise distribution to be visualized in a variety of normal and pathological mineralized **tissues**. The present ultrastructural study reports on the epithelial expression and extracellular localization of several noncollagenous **proteins** in rat and human kidney stones using high-resolution colloidal-gold immunocytochemistry. To this end, we have examined in an ethylene glycol-induced calcium oxalate model of urolithiasis in the rat, and in human kidney stones, the distribution of certain noncollagenous and plasma **proteins** known to accumulate in bone and other mineralized **tissues** that include osteopontin, osteocalcin, bone sialoprotein, **albumin**, and alpha-2HS-glycoprotein. Of these **proteins**, osteopontin (uropontin) and osteocalcin (or osteocalcin-related gene/**protein**) were prominent constituents of the calcium oxalate-associated crystal "ghosts" found in the nuclei, lamellae, and striations of the organic matrix of lumenal renal calculi in the rat and of small crystal ghosts found within epithelial cells. Immunocytochemical labeling for both **proteins** of the content of secretory granules in tubular epithelial cells from treated rats, together with labeling of a similarly textured organic material in the tubular lumen, provides evidence for cosecretion of osteopontin and osteocalcin by epithelial cells, their transit through the urinary filtrate, and ultimately their incorporation into growing renal calculi. In normal rat kidney, osteopontin was localized to the Golgi apparatus of thin loop of Henle cells. In human calcium oxalate monohydrate stones, osteopontin was similarly detected in the lamellae and striations of the organic matrix. Based on these data, it is proposed that during urolithiasis, secretion of osteopontin (uropontin) and osteocalcin (or osteocalcin-related gene/**protein**), and the subsequent incorporation of these **proteins** into kidney stone matrix, may influence the nucleation, growth processes, aggregation, and/or tubular **adhesion** of renal calculi in mammalian kidneys.

L20 ANSWER 16 OF 42 MEDLINE DUPLICATE 4
ACCESSION NUMBER: 95371257 MEDLINE
DOCUMENT NUMBER: 95371257
TITLE: Renal expression of genes that promote interstitial inflammation and fibrosis in rats with

protein-overload proteinuria.

AUTHOR: Eddy A A; Giachelli C M
CORPORATE SOURCE: Division of Nephrology, Hospital for Sick Children, University of Toronto, Ontario, Canada.
SOURCE: KIDNEY INTERNATIONAL, (1995 Jun) 47 (6) 1546-57.
Journal code: KVB. ISSN: 0085-2538.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199511

AB Rats with significant proteinuria induced by daily injections of bovine serum **albumin** develop interstitial inflammation and fibrosis. The present study was designed to investigate the molecular basis of interstitial monocyte (Mo) recruitment and early interstitial fibrosis. Groups of rats were sacrificed after one, two and three weeks. Despite an increase in interstitial Mo at week 1, whole kidney mRNA levels were not elevated for monocyte chemoattractant **protein**-1 (MCP-1), osteopontin or vascular cell **adhesion** molecule-1 (VCAM-1). Only osteopontin mRNA levels were significantly elevated in the renal cortex at four days. At two and three weeks, MCP-1 and osteopontin mRNA levels were increased and the **proteins** showed distinct tubular patterns of distribution. By immunostaining increased expression of VCAM-1 and intercellular **adhesion** molecule-1 (ICAM-1) was restricted to their presence or the surface of the interstitial inflammatory cells. TGF-beta 1 mRNA levels were increased at weeks 1, 2 and 3 (2.1, 2.9, 3.6x); interstitial and occasional cortical tubular cells expressed TGF-beta 1 mRNA and **protein**. There was a progressive rise in the number of cortical interstitial fields with increased staining for **collagen** (col) 1 (18, 29, 44%), col III (39, 61, 63%), col IV (7, 13, 29%), laminin (4, 10, 30%), fibronectin (14, 28, 37%), tenascin (19, 22, 14%) and in total renal col measured biochemically (1.1, 1.4, 2.0x) at weeks 1, 2 and 3, respectively. Renal matrix **protein** mRNA levels were variable and not always predictive of fibrosis. Only col I and tenascin levels were increased at week 1; all matrix **protein** mRNA levels except col IV were increased at week 2; but only tenascin, laminin and col IV mRNA levels remained elevated at three weeks. Plasminogen activator inhibitor-1 (PAI-1) and **tissue** inhibitor of metallo-proteinases (TIMP)-1 mRNA levels were significantly increased at two weeks. During the three weeks there was no change in urokinase, stromelysin or TIMP-3 mRNA levels. These results suggest that both increased matrix **protein** synthesis and altered matrix remodeling/degradation contribute to the final interstitial fibrogenic process in rats with **protein**-overload proteinuria. Mo, one of the sources of TGF-beta 1, infiltrate the interstitium by complex recruitment mechanisms which may depend in part on osteopontin, ICAM-1 and

VCAM-1 expression.

L20 ANSWER 17 OF 42 MEDLINE
ACCESSION NUMBER: 95363116 MEDLINE
DOCUMENT NUMBER: 95363116
TITLE: L-selectin (CD62L) cross-linking signals neutrophil adhesive functions via the Mac-1 (CD11b/CD18) beta 2-integrin.
AUTHOR: Simon S I; Burns A R; Taylor A D; Gopalan P K; Lynam E B; Sklar L A; Smith C W
CORPORATE SOURCE: Speros P. Martel Section of Leukocyte Biology, Department of Pediatrics, Baylor College of Medicine, Houston, TX 77030, USA.
CONTRACT NUMBER: AI 31652 (NIAID)
HL 42550 (NHLBI)
HL 43026 (NHLBI)
SOURCE: JOURNAL OF IMMUNOLOGY, (1995 Aug 1) 155 (3) 1502-14.
Journal code: IFB. ISSN: 0022-1767.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals; Cancer Journals
ENTRY MONTH: 199511

AB Emigration of leukocytes at sites of inflammation is initiated by the selectin family of carbohydrate-binding **adhesion** molecules. Molecular crossbridges initiate rolling of cells along the vascular endothelium where chemokines such as IL-8 and platelet activating factor (PAF) may be presented to their receptors on the leukocyte surface resulting in cell stimulation. Integrin activation appears to be a requirement for subsequent cell localization and diapedesis into the **tissue**. Several recent reports have demonstrated that ligation and cross-linking of neutrophil L-selectin results in neutrophil activation, including intracellular calcium release, superoxide production, and induction of mRNA for production of IL-8 and TNF-alpha. The purpose of this study was to examine whether ligation and cross-linking of L-selectin would specifically result in activation of beta 2-integrin-dependent **adhesion**. A fluorescence flow cytometric assay was developed that directly measures Mac-1-dependent cell **adhesion**. Fluorescent latex beads (2-microns diameter) were adsorbed with **albumin** or fibrinogen and added in excess to human neutrophils in a shear-stirred suspension. Following stimulation the kinetics of bead capture by neutrophils was continuously measured in real time on the flow cytometer. The onset of bead binding was detected in the presence of extremely low concentrations of PAF (10 pM) or formyl **peptide** (0.2 nM) stimulation. Ligation of L-selectin with whole IgG DREG200 or DREG56 Ab, but not controls (anti-CD44, -CD45, -CD11a), resulted in a significant potentiation

of bead binding. Cross-linking F(ab')2 fragments of DREG200 with a goat anti-mouse F(ab')2 secondary Ab also stimulated beta 2-integrin-dependent **adhesion** in a dose-dependent fashion. A chimeric form of DREG200 expressing gamma 4 or gamma 1 isotypes of human Fc domain also stimulated cell **adhesion** when cross-linked. Surface expression of CD18 and an activation-dependent epitope, as detected with mAb24, also increased in response to L-selectin cross-linking. Cross-linking L-selectin induced significant **adhesion** and transmigration of neutrophils across human umbilical vein endothelial cells. We propose that cross-linking of L-selectin results in a cell signal that directly stimulates beta 2-integrin **adhesive** responses.

L20 ANSWER 18 OF 42 JICST-EPlus COPYRIGHT 1999 JST
ACCESSION NUMBER: 950560589 JICST-EPlus
TITLE: The Mechanism of Interaction of Sodium Dodecyl Sulfate with Elastic Fibers.
AUTHOR: KAWAZOYE S; TIAN S-F; TODA S; TAKASHIMA T; SUNAGA T; MATSUMURA S
FUJITANI N
HIGASHINO H
CORPORATE SOURCE: Saga Medical School, Saga, JPN
Kurume Univ. School of Medicine, Fukuoka, JPN
Kinki Univ. School of Medicine, Osaka, JPN
SOURCE: J Biochem, (1995) vol. 117, no. 6, pp. 1254-1260.
Journal Code: F0286A (Fig. 6, Tbl. 1, Ref. 20)
CODEN: JOBIAO; ISSN: 0021-924X
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article
LANGUAGE: English
STATUS: New
AB Sodium dodecyl sulfate (SDS), an anionic hydrophobic ligand, is known to alter the mechanical properties of elastic fibers. In order to analyze the mechanism of the alteration, two forms of fibrous elastins, "solid" and "powder" elastins, which consisted of fascicular elastic fibers and single or oligomeric elastic fibers, respectively, were prepared from bovine aorta, and the interactions of SDS with these elastins in the presence and absence of 0.15 M NaCl were studied. The solid elastin was able to retain 1.2- to 1.4-fold larger amounts of SDS than the powder elastin under both conditions, and both elastins retained 1.2-fold or larger amounts of SDS in the presence of NaCl than in its absence. Whereas both elastins released the retained SDS gradually on repeated washing with an SDS-free buffer, the release rates from the solid elastin, especially the rate in the presence of NaCl, were much smaller than those from the powder elastin, and the solid elastin retained approximately 40% of the bound SDS under conditions where the powder elastin lost most of its SDS. The SDS-binding capacities of both elastins were significantly lower than those of soluble x-elastin

and serum **albumin**, which bound SDS homogeneously on the polypeptide chains. When the washed SDS-bound solid elastin was incubated with **methylene blue** and examined under a microscope, most of the **methylene blue**-SDS complex was located at the interfiber spaces of the elastic fibers. These results suggest that SDS alters the mechanical properties of elastic fibers by binding to the interfiber spaces and surfaces of the fibers rather than by binding to the internal polypeptide chains. (author abst.)

L20 ANSWER 19 OF 42 MEDLINE DUPLICATE 5
ACCESSION NUMBER: 95363879 MEDLINE
DOCUMENT NUMBER: 95363879
TITLE: Interleukin-8 increases endothelial permeability independent of neutrophils.
AUTHOR: Biffl W L; Moore E E; Moore F A; Carl V S; Franciose R J; Banerjee A
CORPORATE SOURCE: Department of Surgery, Denver General Hospital, CO 80204-4507, USA..
CONTRACT NUMBER: P50GM49222 (NIGMS)
T32GM08315 (NIGMS)
SOURCE: JOURNAL OF TRAUMA, (1995 Jul) 39 (1) 98-102; discussion 102-3.
Journal code: KAF. ISSN: 0022-5282.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 199511
AB Interleukin-8 (IL-8) has been associated with a variety of hyperinflammatory states and adverse clinical events. Circulating IL-8 levels correlate with the severity of **tissue** trauma, and excessive elevations of IL-8 are associated with postinjury adult respiratory distress syndrome and multiple organ failure. While IL-8 is a potent neutrophil (PMN) chemoattractant and activator and enhances PMN transendothelial migration, it also acts to inhibit PMN **adhesion** to stimulated endothelial cells (ECs). We hypothesized that IL-8 could interact directly with ECs to increase permeability independent of PMNs. Human umbilical vein ECs (HUVECs) were cultured on **collagen**-coated micropore filters, and integrity of the EC monolayer measured by **albumin** flux across the filter. Cytochalasin D was used as a positive control. IL-8 induced increased permeability at a concentration of 1000 ng/mL. This effect was abrogated by preincubation of HUVECs with a **protein** synthesis inhibitor (cycloheximide). These data suggest a role for IL-8 in promoting endothelial leak independent of PMNs, via a mechanism involving **protein** synthesis.

Searcher : Shears 308-4994

L20 ANSWER 20 OF 42 MEDLINE DUPLICATE 6
ACCESSION NUMBER: 95073682 MEDLINE
DOCUMENT NUMBER: 95073682
TITLE: Distribution of vitronectin in plasma and liver tissue: relationship to chronic liver disease.
AUTHOR: Kobayashi J; Yamada S; Kawasaki H
CORPORATE SOURCE: Second Department of Internal Medicine, Tottori University Faculty of Medicine, Yonago, Japan..
SOURCE: HEPATOLOGY, (1994 Dec) 20 (6) 1412-7.
Journal code: GBZ. ISSN: 0270-9139.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199503
AB To clarify the clinical significance of vitronectin, we compared the concentration of plasma vitronectin with serum fibrous markers and liver function test values in patients with chronic liver diseases. We also evaluated the vitronectin content in the liver by means of enzyme-linked immunosorbent assay and the localization of vitronectin in liver **tissue** with enzyme immunohistochemistry. In chronic liver disease, the concentration of plasma vitronectin was significantly lower than that in healthy controls, being related to the severity of liver disease. The plasma levels of vitronectin showed no correlation to fibrous markers but a significant correlation with those of serum **albumin** and prothrombin time. On the other hand, the content of vitronectin in liver **tissue** was significantly increased in chronic liver disease compared with that in normal controls. In the normal liver, vitronectin was observed in the portal area by light microscopy. In chronic hepatitis and cirrhosis, vitronectin was found in the connective **tissue** around the portal and central veins and in the areas of piecemeal and focal necrosis. These findings suggested that vitronectin is deposited in injured **tissue** through the process of repair and fibrosis and plays an important role as an **adhesive protein**. Moreover, the lower levels of plasma vitronectin in chronic liver disease may be due to its decreased synthesis, deposition or both in injured **tissue**.

L20 ANSWER 21 OF 42 MEDLINE DUPLICATE 7
ACCESSION NUMBER: 94253245 MEDLINE
DOCUMENT NUMBER: 94253245
TITLE: Mapping the heparin-binding sites on type I **collagen** monomers and fibrils.
AUTHOR: San Antonio J D; Lander A D; Karnovsky M J; Slayter H S
CORPORATE SOURCE: Department of Pathology, Harvard Medical School, Boston, Massachusetts 02115.

CONTRACT NUMBER: HL 33014 (NHLBI)
HL 17747 (NHLBI)
SOURCE: JOURNAL OF CELL BIOLOGY, (1994 Jun) 125 (5) 1179-88.
Journal code: HMV. ISSN: 0021-9525.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 199409

AB The glycosaminoglycan chains of cell surface heparan sulfate proteoglycans are believed to regulate cell **adhesion**, proliferation, and extracellular matrix assembly, through their interactions with heparin-binding **proteins** (for review see Ruoslahti, E. 1988. Annu. Rev. Cell Biol. 4:229-255; and Bernfield, M., R. Kokenyesi, M. Kato, M. T. Hinkes, J. Spring, R. L. Gallo, and E. J. Lose. 1992. Annu. Rev. Cell Biol. 8:365-393). Heparin-binding sites on many extracellular matrix **proteins** have been described; however, the heparin-binding site on type I **collagen**, a ubiquitous heparin-binding **protein** of the extracellular matrix, remains undescribed. Here we used heparin, a structural and functional analogue of heparan sulfate, as a probe to study the nature of the heparan sulfate proteoglycan-binding site on type I **collagen**. We used affinity coelectrophoresis to study the binding of heparin to various forms of type I **collagen**, and electron microscopy to visualize the site(s) of interaction of heparin with type I **collagen** monomers and fibrils. Using affinity coelectrophoresis it was found that heparin has similar affinities for both procollagen and **collagen** fibrils (Kd's approximately 60-80 nM), suggesting that functionally similar heparin-binding sites exist in type I **collagen** independent of its aggregation state. Complexes of heparin-**albumin**-gold particles and procollagen were visualized by rotary shadowing and electron microscopy, and a preferred site of heparin binding was observed near the NH2 terminus of procollagen. Native or reconstituted type I **collagen** fibrils showed one region of significant heparin-gold binding within each 67-nm period, present near the division between the overlap and gap zones, within the "a" bands region. According to an accepted model of **collagen** fibril structure, our data are consistent with the presence of a single preferred heparin-binding site near the NH2 terminus of the **collagen** monomer. Correlating these data with known type I **collagen** sequences, we suggest that the heparin-binding site in type I **collagen** may consist of a highly basic triple helical domain, including several **amino** acids known sometimes to function as disaccharide acceptor sites. We propose that the heparin-binding site of type I **collagen** may play a key role in cell **adhesion** and migration within connective **tissues**, or in the cell-directed assembly or restructuring

of the collagenous extracellular matrix.

L20 ANSWER 22 OF 42 MEDLINE DUPLICATE 8
ACCESSION NUMBER: 95087379 MEDLINE
DOCUMENT NUMBER: 95087379
TITLE: Photodynamic biologic tissue glue.
AUTHOR: Khadem J; Truong T; Ernest J T
CORPORATE SOURCE: Department of Ophthalmology and Visual Science, University of Chicago, Illinois 60637..
SOURCE: CORNEA, (1994 Sep) 13 (5) 406-10.
Journal code: DSN. ISSN: 0277-3740.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199503
AB We studied both heat- and light-activated **tissue** glues, and while a heat-activated mixture such as **albumin** and fluorescein isothiocyanate was effective, we believed that a light-activated substance would have less of an effect on adjacent **tissue**. Our glue uses a photosensitive singlet oxygen generator to cross-link a **protein** solder with corneal stromal **collagen**. The mixture consists of 18% fibrinogen and 2.6 mg/ml of riboflavin-5-phosphate activated with a blue-green (488-514 nm) Argon laser. We tested our glue by soldering 5-mm penetrating central corneal incisions made in human cadaver eyes. The strength of the closure was measured by cannulating the vitreous cavity with an 18-gauge needle connected to a saline reservoir. The pressure in the reservoir was elevated by connecting it to a sphygmomanometer. Immediately following **tissue** closure, the intraocular pressure was increased until the wound burst. We soldered and measured 10 eyes and found a mean bursting pressure of 154 mm Hg, with a range of 80-260 mm Hg. Our laser-activated **tissue** glue is an effective **adhesive** for corneal **tissue**, and we now plan to carry out toxicity studies in living animals.

L20 ANSWER 23 OF 42 SCISEARCH COPYRIGHT 1999 ISI (R)
ACCESSION NUMBER: 93:701195 SCISEARCH
THE GENUINE ARTICLE: MH087
TITLE: STUDIES ON BINDING OF GLYCOSAMINOGLYCANS TO STREPTOCOCCUS-PYOGENES BY USING I-125 HEPARAN-SULFATE AS A PROBE
AUTHOR: SCHMIDT K H (Reprint); ASCENCIO F; FRANSSON L A; KOHLER W; WADSTROM T
CORPORATE SOURCE: UNIV JENA, INST EXPTL MICROBIOL, WINZERLAER STR 10, D-07745 JENA, GERMANY (Reprint); LUND UNIV, DEPT MED & PHYSIOL CHEM, S-22100 LUND, SWEDEN; LUND UNIV, DEPT MED MICROBIOL, S-22362 LUND, SWEDEN
Searcher : Shears 308-4994

COUNTRY OF AUTHOR: GERMANY; SWEDEN
SOURCE: ZENTRALBLATT FUR BAKTERIOLOGIE-INTERNATIONAL JOURNAL OF MEDICAL MICROBIOLOGY VIROLOGY PARASITOLOGY AND INFECTIOUS DISEASES, (NOV 1993) Vol. 279, No. 4, pp. 472-483.
ISSN: 0934-8840.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 32
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Binding of I-125-heparan sulphate to the cell surface of Streptococcus pyogenes is mediated by **proteins**, that could be released from the streptococcal cell wall by using alkaline buffer. SDS-electrophoresis revealed two bands with molecular weights of 63 and 58 kDa. Binding of the I-125-labelled heparan sulphate probe to streptococci seems to be due to charge interactions, as the same probe was displaced by unlabelled heparan sulphate, other negatively charged molecules such as heparin, dextran sulphate, dermatan sulphate or by high ionic strength. The interaction was also strongly influenced by pH. The binding constant at pH 7.2 was estimated to be 9.8 x 10(6) mol/l, suggesting a moderate affinity. The presence of **collagen** of different types enhanced binding of I-125-labelled heparan sulphate to streptococci, whereas fibronectin and vitronectin had an inhibitory effect. The cooperation between heparan sulphate and **collagen** could be important for the **adhesion** of streptococci to connective **tissue**.

L20 ANSWER 24 OF 42 MEDLINE
ACCESSION NUMBER: 93245885 MEDLINE
DOCUMENT NUMBER: 93245885
TITLE: The effect of extracellular matrix molecules on the in vitro behavior of bovine endothelial cells.
AUTHOR: Underwood P A; Bennett F A
CORPORATE SOURCE: CSIRO Division of Biomolecular Engineering, Laboratory for Molecular Biology, North Ryde, New South Wales, Australia..
SOURCE: EXPERIMENTAL CELL RESEARCH, (1993 Apr) 205 (2) 311-9.
Journal code: EPB. ISSN: 0014-4827.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 199308

AB Extracellular matrix (ECM) is an important mediator of endothelial functions such as **adhesion**, spreading, migration, proliferation, and maintenance of differentiated functions. Attachment of cultured cells to **tissue** culture polystyrene

(TCPS) is dependent on vitronectin which adsorbs onto the surface from the serum in the culture medium. Vitronectin (VN) will adsorb efficiently to TCPS even if the latter has been coated with another matrix molecule and blocked with **albumin**. This means that studies of the interactions of cells with individual coated ECM molecules will be confounded by the presence of adsorbed VN if serum is present in the culture medium. In this study, the **adhesion**, spreading, growth, and output of endogenous matrix molecules by bovine corneal endothelial (BCE) cells were measured on five different matrix substrates using medium which had been depleted of vitronectin to avoid such confounding effects. The same cell **adhesion** and spreading maxima were achieved on vitronectin, fibronectin (FN), laminin (LM), and types I and IV **collagen** (col I, col IV). The coating concentrations required to achieve these maxima, however, differed among the substrates, LM needing considerably higher concentrations than the other substrates for both maximal **adhesion** and spreading and FN needing higher concentrations for cell spreading. When cells were continuously passaged on each of the five substrates coated at concentrations optimal for cell spreading, no differences in cell proliferation rates or cell morphology were observed. Significant differences, however, were observed in the subcellular output of endogenous matrix molecules (FN, LM, col IV, and thrombospondin) between the different substrates. Col I was a poor substrate for the production of all ECM molecules tested over the 10 passages of the experiment, whereas col IV was a consistently good substrate. LM and FN substrates displayed differential effects on the output of different ECM molecules. VN was unique in that BCE cells at early passage on this substrate produced high levels of endogenous matrix molecules, whereas with continued passage on this substrate, a progressive decline in ECM secretion was observed. These results show that incorporation of individual molecules into the ECM by BCE cells in culture is significantly affected by the nature of the substratum. They further suggest that passage of endothelial cells in media containing serum (which results in coating of VN onto the substrate) may result in a progressive reduction of ECM output.

L20 ANSWER 25 OF 42 MEDLINE DUPLICATE 9
ACCESSION NUMBER: 94363387 MEDLINE
DOCUMENT NUMBER: 94363387
TITLE: Eosinophil adhesion and maturation is modulated by laminin.
AUTHOR: Tourkin A; Anderson T; LeRoy E C; Hoffman S
CORPORATE SOURCE: Medical University of South Carolina, Division of Rheumatology, Charleston 29425..
CONTRACT NUMBER: HL-37641 (NHLBI)
SOURCE: CELL ADHESION AND COMMUNICATION, (1993 Sep) 1 (2) 161-76.
Journal code: B4A. ISSN: 1061-5385.
Searcher : Shears 308-4994

PUB. COUNTRY: Switzerland
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199412

AB Eosinophils (Eo) participate in the inflammatory response to parasites, allergins, toxins, and epitopes recognized by autoimmune antibodies. Nonetheless, little attention has heretofore been paid to the interactions of Eo with extracellular matrix (ECM) **proteins** during their migration through the subendothelial basement membrane and into the surrounding **tissue**. Therefore, we have studied the **adhesion** of Eo to specific ECM **proteins** and the effect of this **adhesion** on Eo viability and maturation. Control Eo (from normal donors) adhere no better to substrates coated with laminin (LM), fibronectin (FN), cytotactin (CT), or **collagen** types I or IV (Col IV) than they do to human serum **albumin** coated substrates. In contrast, Eo activated in vitro with IL-5 or in vivo in patients with eosinophilia bind well to LM, FN and Col IV. LM is by far the most avid ligand among these molecules. For example, 43% of input cells bind to a substrate bearing 200 fmol/cm2 of LM; a similar level of **adhesion** to FN requires 30 times as much absorbed **protein**. Antibody inhibition experiments suggest that the alpha 6 beta 1 integrin heterodimer is the predominant LM receptor on these cells. Flow cytometry showed similar levels of these subunits on control and activated Eo, suggesting that Eo **adhesion** to LM is not regulated simply by cell surface integrin concentration. The effects of ECM **proteins** on Eo behavior were also examined. A LM-coated substrate (with no added cytokine) was found to be almost as effective as IL-5 in maintaining Eo viability while an equally **adhesive** FN-coated substrate had much less effect. Normally, even in the presence of 10% serum, no Eo survive a 5-day incubation in vitro unless IL-3, IL-5, or GM-CSF is added to the medium. Conditions that inhibit **adhesion** to LM (anti-integrin antibodies in the medium or CT on the substrate) and certain anti-cytokine antibodies inhibited the promotion of Eo viability by LM. During incubation on LM, Eo become hypodense, as they do in the presence of IL-5, indicating that they have become activated. These observations suggest that the interactions of Eo and ECM **proteins** may be important both for their potential to direct Eo migration and for their ability to regulate Eo viability, cytokine production, and maturation.

L20 ANSWER 26 OF 42 WPIDS COPYRIGHT 1999 DERWENT INFORMATION LTD
ACCESSION NUMBER: 1992-079795 [10] WPIDS
DOC. NO. CPI: C1992-036911
TITLE: **Adhesive** for sepd. **tissues** or prosthetic materials - comprising natural or synthetic **peptide** and component which

forms matrix sol. or gel.
DERWENT CLASS: A96 B04 D22 G03
INVENTOR(S): BASS, L S; EATON, A M; LIBUTTI, S K
PATENT ASSIGNEE(S): (BASS-I) BASS L S; (EATO-I) EATON A M; (LIBU-I) LIBUTTI S K; (UYCO) UNIV COLUMBIA NEW YORK
COUNTRY COUNT: 22
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9202238	A	19920220	(199210)*		38
RW: AT BE CH DE DK ES FR GB GR IT LU NL SE					
W: AU BR CA FI JP KP NO					
AU 9184979	A	19920302	(199224)		
US 5209776	A	19930511	(199320)		10
EP 542880	A1	19930526	(199321)	EN	38
R: AT BE CH DE DK ES FR GB GR IT LI LU NL SE					
US 5292362	A	19940308	(199410)		13
JP 06507376	W	19940825	(199438)		14
EP 542880	A4	19930728	(199527)		
EP 542880	B1	19990825	(199939)	EN	
R: AT BE CH DE DK ES FR GB GR IT LI LU NL SE					
DE 69131556	E	19990930	(199946)		

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
AU 9184979	A		AU 1991-84979	19910723
			WO 1991-US5186	19910723
US 5209776	A		US 1990-560069	19900727
EP 542880	A1		EP 1991-915440	19910723
			WO 1991-US5186	19910723
US 5292362	A	CIP of	US 1990-560069	19900727
			US 1991-727607	19910709
JP 06507376	W		JP 1991-514745	19910723
			WO 1991-US5186	19910723
EP 542880	A4		EP 1991-915440	
EP 542880	B1		EP 1991-915440	19910723
			WO 1991-US5186	19910723
DE 69131556	E		DE 1991-631556	19910723
			EP 1991-915440	19910723
			WO 1991-US5186	19910723

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9184979	A	Based on	WO 9202238

Searcher : Shears 308-4994

EP 542880	A1	Based on	WO 9202238
US 5292362	A	CIP of	US 5209776
JP 06507376	W	Based on	WO 9202238
EP 542880	B1	Based on	WO 9202238
DE 69131556	E	Based on	EP 542880
		Based on	WO 9202238

PRIORITY APPLN. INFO: US 1991-727607 19910709; US 1990-560069 19900727

AN 1992-079795 [10] WPIDS

AB WO 9202238 A UPAB: 19970723

A compsn. for bonding sepd. tissues together or for coating tissues or prosthetic materials is claimed comprising: (a) at least one first component (I) selected from natural or synthetic **peptides**, modified, crosslinked, cleaved or shortened variants or derivs. and (b) at least one second component (II), which is different from (I), adapted to support (I) to form a matrix, sol or gel with (I).

(I) may be, e.g., **albumin**, alpha-globulins, beta-globulins, gamma-globulins, transthyretin, fibrinogen, thrombin, **collagen**, elastin, keratin, fibroin, fibrin or fibronectin. (II) may be, e.g., hyaluronic acid, chondroitin sulphate, dermatan sulphate, keratan sulphate, heparin, heparan sulphate, **collagen**, fructose, dextrans, agarose, alginic acid, pectins, methylcellulose, hydroxycellulose, hydroxypropylmethylcellulose, hydroxyethylcellulose, CMC, glycerine, mannitol, sorbitol, polyvinylalcohol or polyethylene glycol. The compsn. may also contain a chromophore, e.g., indocyanine green, fluorescein, rose bengal, gentian violet or **methylene blue**.

USE/ADVANTAGE - The compsn. provides a **tissue** bond having high tensile strength elasticity, deformability, water tightness, viscosity and **adhesivity** for a large variety of surgical procedures. The compsn. can also be used to coat implantable devices to enhance their strength and resistance to fluids, to seal pores in the weave of the material and to reduce thrombogenicity. @(38pp Dwg.No.0/0)bi

ABEQ US 5209776 A UPAB: 19931113

Compsn. for bonding sepd. tissues together or for coating tissues or prosthetic materials comprises (a) at least 4.2 wt.%, based on total wt. of compsn., of at least one of naturally occurring or synthetic **peptide** (mixts.); and (b) component to support (a) to form a matrix, sol or gel. More specifically, the **peptides** are structural **peptides** or serum **proteins** and (b) is selected from proteoglycans, saccharides, polyalcohols, or glycosaminoglycan. The compsn. has a viscosity of 1000-1000000 (pref. 100-1000) centipoise. USE/ADVANTAGE - The compsn. enhances strength and water tightness pref. upon the application of energy of tissues or prosthetic materials. The compsn. is easy to handle,

partic. during surgery. The compsn. provides a water-tight, flexible, strong and biologically compatible bond between sepd. tissues.
Dwg.0/0

ABEQ EP 542880 A UPAB: 19931114
A compsn. for bonding sepd. tissues together or for coating tissues or prosthetic materials is claimed comprising: (a) at least one first component (I) selected from natural or synthetic **peptides**, modified, crosslinked, cleaved or shortened variants or derivs. and (b) at least one second component (II), which is different from (I), adapted to support (I) to form a matrix, sol or gel with (I).

(I) may be, e.g., **albumin**, alpha-globulins, beta-globulins, gamma-globulins, transthyretin, fibrinogen, thrombin, **collagen**, elastin, keratin, fibroin, fibrin or fibronectin. (II) may be, e.g., hyaluronic acid, chondroitin sulphate, dermatan sulphate, keratan sulphate, heparin, heparan sulphate, **collagen**, fructose, dextrans, agarose, alginic acid, pectins, methylcellulose, hydroxycellulose, hydroxypropylmethylcellulose, hydroxyethylcellulose, CMC, glycerine, mannitol, sorbitol, polyvinylalcohol or polyethylene glycol. The compsn. may also contain a chromophore, e.g., indocyanine green, fluorescein, rose bengal, gentian violet or **methylene blue**.

USE/ADVANTAGE - The compsn. provides a **tissue** bond having high tensile strength elasticity, deformability, water tightness, viscosity and **adhesivity** for a large variety of surgical procedures. The compsn. can also be used to coat implantable devices to enhance their strength and resistance to fluids, to seal pores in the wave of the material and to reduce thrombogenicity.

ABEQ US 5292362 A UPAB: 19940421
Platelet free compsn. for bonding sepd. tissues or for coating tissues or prosthetics comprises (a) at least 4.2 wt.% naturally occurring **peptides** and/or synthetic **peptides**; and (b) a component which supports (a) to form a matrix, sol or gel.

Pref. the **proteins** are **albumin**, alpha-globulins, beta-globulins, gamma-globulins, transthyretin, fibrinogen or thrombin. The second component is pref. proteoglycan, glycoprotein, saccharide, poly-alcohol, **protein** gel, gelatin or their salts.

ADVANTAGE - Compsn. is activated by laser to form a strong biologically comparable bond or coating.
Dwg.0/0

L20 ANSWER 27 OF 42 SCISEARCH COPYRIGHT 1999 ISI (R)
ACCESSION NUMBER: 92:365470 SCISEARCH
THE GENUINE ARTICLE: HY326
TITLE: ENDOTHELIUM-DERIVED RELAXING FACTOR CONTRIBUTES TO

THE REGULATION OF ENDOTHELIAL PERMEABILITY

AUTHOR: OLIVER J A (Reprint)
CORPORATE SOURCE: COLUMBIA UNIV, DEPT MED, NEW YORK, NY, 10032 (Reprint)
COUNTRY OF AUTHOR: USA

SOURCE: JOURNAL OF CELLULAR PHYSIOLOGY, (JUN 1992) Vol. 151, No. 3, pp. 506-511.
ISSN: 0021-9541.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 33

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB To determine whether endothelium-derived relaxing factor (EDRF) contributes to the regulation of endothelial permeability, the transendothelial flux of C-14-sucrose, a marker for the paracellular pathway across endothelial monolayers (Oliver, J. Cell. Physiol. 145:536-548, 1990), was examined in monolayers of bovine aortic endothelial cells grown on **collagen**-coated filters. The permeability coefficient of C-14-sucrose was significantly decreased by 10(-3) M 8-Bromoguanosine 3',5'-cyclic monophosphate or by 5 x 10(-6) M glyceryl trinitrate, an activator of soluble guanylate cyclase. Depletion of L-arginine from endothelial monolayers increased C-14-sucrose permeability from 3.21 +/- 0.59 to 3.88 +/- 0.50 x 10(-5) cm . sec-1 (mean +/- SEM; n = 6; P < 0.05). The acute administration of 5 x 10(-4) M L-arginine to monolayers depleted of this amino acid decreased C-14-sucrose permeability from 2.91 +/- 0.27 to 2.52 +/- 0.26 x 10(-5) cm . sec-1 (n = 11; P < 0.05). C-14-sucrose permeability was increased by 10(-7) M bradykinin and this effect was enhanced by the presence of each one of the following compounds: 10(-5) M **methylene blue**, 4 x 10(-6) M oxyhemoglobin, 5 x 10(-4) M N(G)-methyl-L-arginine or 5 x 10(-4) M N(omega)-nitro-L-arginine. These results suggest that EDRF contributes to the sealing of the endothelial monolayer and that EDRF released by bradykinin acts as a feedback inhibitor attenuating the increase in endothelial permeability induced by this peptide. Because endothelial cells have the ability to contract and relax and possess guanylate cyclase responsive to nitric oxide, our results suggest that EDRF decreases C-14-sucrose permeability by relaxing endothelial cells, thereby narrowing the width of endothelial junctions.

L20 ANSWER 28 OF 42 MEDLINE DUPLICATE 10

ACCESSION NUMBER: 92349003 MEDLINE
DOCUMENT NUMBER: 92349003

TITLE: Interactions between HIV-infected monocytes and the extracellular matrix: increased capacity of HIV-infected monocytes to adhere to and spread on extracellular matrix associated with changes in

extent of virus replication and cytopathic effects in infected cells.

AUTHOR: Dhawan S; Vargo M; Meltzer M S
CORPORATE SOURCE: Department of Cellular Immunology, Walter Reed Army Institute of Research, Washington, DC 20307.

SOURCE: JOURNAL OF LEUKOCYTE BIOLOGY, (1992 Jul) 52 (1) 62-9.
Journal code: IWY. ISSN: 0741-5400.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 199211

AB Monocytes express cell surface receptors for extracellular matrix (ECM) **proteins** of basement membranes. These receptors are engaged during extravasation of cells through capillary endothelium into **tissue**. The number of human immunodeficiency virus (HIV)-infected monocytes that adhered to ECM over 2 h was threefold higher than that of uninfected control cells. This difference was ECM specific and was not observed with a bovine serum **albumin** substrate. Enhanced **adhesion** to ECM was evident in monocytes by 4 days after HIV infection and increased through 10 days. Monocytes exposed to a T cell-tropic HIV strain that binds to but does not replicate in monocytes showed no changes in adherence to ECM. Thus, productive infection of monocytes by HIV induces a significant increase in the capacity of these cells to interact with ECM. Enhanced **adhesion** of HIV-infected monocytes to ECM was associated with increased spreading: at 12 h, sixfold more HIV-infected monocytes were spread on ECM than were uninfected control cells. Cell processes of HIV-infected monocytes formed a complex network on ECM: many of these cells expressed HIV **proteins** as detected by indirect immunofluorescence. HIV-associated cytopathic effects and levels of virion-associated reverse transcriptase activity depended on the substrate to which monocytes were attached. Virus replication and cytopathic effects in monocytes adhered to ECM, fibronectin, or plastic alone were comparable. In contrast, HIV-infected monocytes attached to laminin showed a significant increase in virus replication and in extent of cytopathic effects through 2 weeks after infection. The lowest levels of HIV replication and cytopathic effects were in monocytes attached to **collagen** IV. Interactions between monocytes and ECM profoundly affect the manner in which these cells control HIV infection: HIV infection changes the capacity of infected monocytes to attach and spread on ECM; attachment to ECM alters the extent of virus replication in infected cells.

L20 ANSWER 29 OF 42 MEDLINE DUPLICATE 11
ACCESSION NUMBER: 91365716 MEDLINE
DOCUMENT NUMBER: 91365716
TITLE: Culture of human adult endothelial cells on

liquid-liquid interfaces: a new approach to the study of cell-matrix interactions.
AUTHOR: Ando J; Albelda S M; Levine E M
CORPORATE SOURCE: Wistar Institute, Philadelphia, Pennsylvania 19104..
CONTRACT NUMBER: R01-HL-34153 (NHLBI)
P01-AG-04861 (NIA)
SOURCE: IN VITRO CELLULAR AND DEVELOPMENTAL BIOLOGY, (1991 Jul) 27A (7) 525-32.
Journal code: HEQ. ISSN: 0883-8364.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 199112

AB Human adult endothelial cells (ECs) were cultured on liquid-liquid interface formed when aqueous culture medium is overlaid onto a fluorocarbon solvent. When ECs were seeded on untreated interfaces, some cells seemed to attach but they did not spread or grow. In contrast, when ECs were seeded on interfaces pretreated with such **proteins** as **collagen** type IV (COL), laminin (LN), fibronectin (FN), and fibrinogen (FG) the cells spread and proliferated until they formed confluent monolayers. **Proteins** such as bovine serum **albumin** (BSA) or gelatin (GN) were not as effective in providing surfaces for vigorous growth. Cells grown on fluorocarbon interfaces expressed specialized characteristics exhibited by endothelial cells grown under the usual culture conditions; they grew in a cobblestone monolayer, stained positively for Factor VIII-related antigen, and produced angiotensin-converting enzyme. The growth rate of ECs was the same whether they were cultured on treated fluorocarbon interfaces or on the usual **tissue** culture plastic surfaces. Using this culture system, the interactions of ECs with various **adhesive proteins** used as substrata was examined. ECs were observed to attach readily to the interfaces coated with GN, COL, LN, FN, and FG, but poorly to those coated with BSA. All the substrates tested, with the exception of BSA, promoted EC growth on fluorocarbon interfaces; ECs tended to grow more rapidly on COL- or FG-coated interfaces than on LN-, FN-, or GN-coated interfaces.

L20 ANSWER 30 OF 42 MEDLINE
ACCESSION NUMBER: 91324576 MEDLINE
DOCUMENT NUMBER: 91324576
TITLE: Granulomatous inflammation and monstrous giant cells in response to intraperitoneal hormone implants in channel catfish (Ictalurus punctatus).
AUTHOR: Goodwin A E; Grizzle J M
CORPORATE SOURCE: Department of Fisheries and Allied Aquacultures, Auburn University, Alabama 36849..

SOURCE: JOURNAL OF COMPARATIVE PATHOLOGY, (1991 Feb) 104 (2) 147-60.
Journal code: HVB. ISSN: 0021-9975.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199111

AB Plastic implants (2.7 mm maximum dimension) of an ethyl vinyl acetate copolymer (EVAc) matrix, containing inulin, bovine serum **albumin** (BSA) and luteinizing hormone releasing hormone (LHRH), were covered with impervious EVAc and then surgically placed into the peritoneal cavity of 1-year-old channel catfish, Ictalurus punctatus. In fish kept in cold water (13 degrees C), 10 per cent of the implants per month were encapsulated by granulation **tissue**. In fish kept in warm water (27 degrees C), 20 per cent of the implants per month were encapsulated, with a total of 86 per cent encapsulated at 5 months. In addition to fibroblasts and capillaries, the granulation **tissue** included macrophages, neutrophils, lymphocytes, plasma cells, multinucleated giant cells and a matrix of **collagen** fibres. The density of the fibrous capsule increased with time. In a separate investigation, it was found that the thickness of the capsule was directly proportional to the degree of exposure of the EVAc matrix to the fish (exposure influenced by the rate of dissolution of the capsule content). Monstrous giant cells with up to 600 nuclei per 5 microns thick section were seen in capsules around implants. On intraperitoneally implanted cover glasses, whole giant cells contained up to 6000 nuclei and were interconnected by cytoplasmic bridges. Signs of neoplasia, implant expulsion or massive **adhesions** were not seen.

L20 ANSWER 31 OF 42 MEDLINE
ACCESSION NUMBER: 90329780 MEDLINE
DOCUMENT NUMBER: 90329780
TITLE: An improved method for determining proteoglycans synthesized by chondrocytes in culture.
AUTHOR: Goldberg R L; Kolibas L M
CORPORATE SOURCE: Ciba-Geigy Corporation, Research Department, Summit, NJ 07901.
SOURCE: CONNECTIVE TISSUE RESEARCH, (1990) 24 (3-4) 265-75.
Journal code: DQH. ISSN: 0300-8207.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199011

AB An improved micro method for measuring sulfated glycosaminoglycans (S-GAG) in chondrocyte cultures using 1,9-Dimethylmethylene Blue

(DMB) has been developed. By increasing the protein concentration in the DMB assay a soluble GAG-DMB complex is prolonged. Without bovine serum **albumin** (BSA) in the phosphate-buffered saline (PBS) medium, the half time for loss of absorbance was 18 min; with 1% BSA-PBS there was no loss of absorbance over this time period. The limit of detection in a 96 well microtiter plate assay was 2 micrograms/ml; for a cuvette assay it was 1 microgram/ml. **Collagen**, DNA and RNA did not interfere with this assay. Hyaluronate caused an increase in absorbance at 530 nm that was lost by preincubating with Streptomyces hyaluronidase. The increase in absorbance was due to a turbidity change because there was no color shift from 600 to 530 nm but rather a uniform increase in absorbance between 400 to 700 nm. To validate the assay, the S-GAG was measured in conditioned medium from primary bovine articular chondrocyte monolayer cultures. A protein synthesis inhibitor, cycloheximide, blocked proteoglycan synthesis by greater than 90%. A cytokine, Interleukin-1 alpha, caused a dose-dependent decrease in proteoglycan accumulation. Chondroitinase ABC digestion of the chondrocyte conditioned medium completely prevented reactivity with the DMB. By preincubating samples with specific enzymes, different types of S-GAG can be measured with this assay. This assay can be used to measure changes in proteoglycans synthesized by chondrocytes.

L20 ANSWER 32 OF 42 MEDLINE
ACCESSION NUMBER: 90075129 MEDLINE
DOCUMENT NUMBER: 90075129
TITLE: **Collagen**-mediated dispersion of NBT-II rat bladder carcinoma cells.
AUTHOR: Tucker G C; Boyer B; Gavrilovic J; Emonard H; Thiery J P
CORPORATE SOURCE: Laboratoire de Physiopathologie du Developpement, CNRS UA 230, Ecole Normale Superieure, Paris, France.
SOURCE: CANCER RESEARCH, (1990 Jan 1) 50 (1) 129-37. Journal code: CNF. ISSN: 0008-5472.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 199003

AB During metastatic spread, locomotion mediated by extracellular matrix components of basement membranes and connective **tissues** has been invoked as a prerequisite to invasion. We studied the interactions of the rat bladder carcinoma cell line NBT-II with fibronectin, laminin, and **collagens** (types I, III, IV, and V). They all promoted cell attachment and spreading. To analyze their scatter potential, we studied epithelial outgrowth and/or peripheral cell dispersion from tumor aggregates. All matrix components allowed partial collapse of the aggregate and the

appearance of a cellular monolayer forming a halo around the aggregate. No peripheral cell dispersion occurred on fibronectin and laminin. **Collagens** (especially types I and III) promoted the dispersion of peripheral NBT-II cells with various speeds of locomotion, as revealed by time-lapse videomicroscopy. With the exception of cells at the periphery on **collagens**, cells inside the halo did not exchange neighbors, migrated transiently as an epithelial sheet during halo formation, and finally remained stationary. These effects were reproduced with NBT-II tumor fragments obtained from nude mice. Tumor cells were linked together with desmosomes (as revealed by immunoreactivity against desmoglein). Migration on **collagens** correlated with the mechanical disruption of intercellular contacts and consequently with the progressive disappearance of desmoglein immunoreactivity. Immunofluorescence studies also revealed a reduced expression of the epithelium-specific cell **adhesion** molecule liver cell **adhesion** molecule after contact with **collagens**. These results suggest that direct interactions with **collagens** may favor single cell infiltration by bladder carcinoma.

L20 ANSWER 33 OF 42 MEDLINE
ACCESSION NUMBER: 90269371 MEDLINE
DOCUMENT NUMBER: 90269371
TITLE: Mg2+ mediates the cell-substratum interaction of Arg-Gly-Asp-dependent HeLa cell **collagen** receptors.
AUTHOR: Beacham D A; Jacobson B S
CORPORATE SOURCE: Department of Biochemistry, University of Massachusetts, Amherst 01003.
CONTRACT NUMBER: GM 29127 (NIGMS)
SOURCE: EXPERIMENTAL CELL RESEARCH, (1990 Jul) 189 (1) 69-80. Journal code: EPB. ISSN: 0014-4827.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 199009
AB Three HeLa cell surface **collagen** receptors of apparent molecular mass 102/58, 87, and 38/33 kDa were eluted from gelatin-Sepharose with salt gradients or Arg-Gly-Asp-containing **peptides**. To understand how the **collagen** receptors are involved in HeLa cell spreading on **collagen** we investigated the effects of divalent cations and Arg-Gly-Asp-containing **peptides** on **adhesion** to gelatin, since HeLa cells behave similarly on both native type I **collagen** and gelatin substrata and also whether Arg-Gly-Asp-containing substrata would substitute for gelatin in facilitating cell spreading. Gly-Arg-Gly-Asp-Ser-containing

peptides in solution inhibited HeLa cell spreading onto gelatin and promoted only partial HeLa cell spreading when bound to **tissue** culture plastic. Both partial spreading of HeLa cells on the Gly-Arg-Gly-Asp-Ser substratum and full spreading on gelatin was dependent on Mg2+, but not on Ca2+. Binding of the 102/58-, 87-, and 38/33-kDa **collagen** receptors to gelatin-Sepharose was increased fourfold in the presence of Mg2+, and subsequent elution of the **collagen** receptors and a 45-kDa **collagen** -binding **protein** not thought to be involved in HeLa cell spreading was achieved with EDTA. In contrast, affinity chromatography on Gly-Arg-Gly-Asp-Ser-Sepharose eluted predominantly the 45-kDa **collagen**-binding **protein** and the 38/33-kDa **collagen** receptor. In summary, the Mg2(+)-dependent interaction of the **collagen** receptors with the Arg-Gly-Asp sequence in **collagen** appears to be essential for the initial events in HeLa cell spreading but is not sufficient for full cell spreading.

L20 ANSWER 34 OF 42 MEDLINE
ACCESSION NUMBER: 85252560 MEDLINE
DOCUMENT NUMBER: 85252560
TITLE: Studies on the locomotory behaviour and adhesive properties of mononuclear phagocytes from blood.
AUTHOR: Lackie J M; Urquhart C M; Brown A F; Forrester J V
SOURCE: BRITISH JOURNAL OF HAEMATOLOGY, (1985 Jul) 60 (3) 567-81.
Journal code: AXC. ISSN: 0007-1048.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 198511

AB Mononuclear phagocytes isolated from peripheral blood move slowly on **albumin**-, **collagen**- and fibronectin-coated glass, as judged by analysis of time-lapse film, although their movement is stimulated somewhat by serum. When a differential-**adhesion** method is used to purify monocytes from a crude mononuclear cell fraction it appears to select a particularly slow-moving sub-group. Despite their slow rate of movement (especially in comparison with neutrophils) monocytes move over and penetrate monolayers of endothelial cells, apparently without difficulty; they are, however, restricted to the upper surface of a fibroblast monolayer. Penetration of reconstituted **collagen** gels by freshly isolated monocytes was not observed but cultured monocytes, which spontaneously detached from the culture substratum over a 48 h period, did invade **collagen** gels. The **adhesive** properties of these cultured cells, measured in a flow-chamber assay, did not differ from freshly isolated monocytes purified on serum-coated dishes and detached with EDTA, and their invasive

capacity does not seem to be a consequence of altered **adhesive** properties. The behavioural differences between monocytes and neutrophils are considerable, although both cell types have to leave the circulation and penetrate **tissues** in vivo.

L20 ANSWER 35 OF 42 MEDLINE
ACCESSION NUMBER: 85248834 MEDLINE
DOCUMENT NUMBER: 85248834
TITLE: Extracellular matrix **proteins** (fibronectin, laminin, and type IV **collagen**) bind and aggregate bacteria.
AUTHOR: Vercellotti G M; McCarthy J B; Lindholm P; Peterson P K; Jacob H S; Furcht L T
CONTRACT NUMBER: HL19725 (NHLBI)
HL28935 (NHLBI)
CA2999 (NCI)
+
SOURCE: AMERICAN JOURNAL OF PATHOLOGY, (1985 Jul) 120 (1) 13-21.
Journal code: 3RS. ISSN: 0002-9440.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals; Cancer Journals
ENTRY MONTH: 198510

AB The normal microbial colonization of sites in the body's **tissues** by certain bacteria requires that the bacteria first bind to extracellular secreted constituents, cell-surface membranes, or cell matrixes. This study examines two interactions of a variety of bacteria with the cell matrix noncollagenous **proteins** fibronectin and laminin and with basement membrane (Type IV) **collagen**. Adherence of bacteria to matrix **proteins** coated on **tissue** culture wells was examined with the use of radiolabeled bacteria. Staphylococcus aureus, Streptococcus pyogenes, and Streptococcus sanguis bound well to fibronectin, laminin, and Type IV **collagen**, whereas a variety of gram-negative organisms did not bind. The interaction of soluble laminin, fibronectin, and Type IV **collagen** with bacteria was monitored by nephelometry with the use of a platelet aggregometer. S. aureus aggregated in response to fibronectin, laminin, or Type IV **collagen**. In contrast, gram-negative organisms did not aggregate with these **proteins**. It appears that fibronectin, laminin, and Type IV **collagen** can bind and aggregate certain gram-positive bacteria, and this binding is dependent on the surface characteristics of the organism. These **adhesion** molecules may play a role in the normal colonization of sites by microorganisms and in invasion during

infections.

L20 ANSWER 36 OF 42 MEDLINE
ACCESSION NUMBER: 85055146 MEDLINE
DOCUMENT NUMBER: 85055146
TITLE: Adhesion of platelets to laminin in the absence of activation.
AUTHOR: Ill C R; Engvall E; Ruoslahti E
CONTRACT NUMBER: HL 26838 (NHLBI)
AM 30051 (NIADDK)
RR 01573 (NCRR)
+
SOURCE: JOURNAL OF CELL BIOLOGY, (1984 Dec) 99 (6) 2140-5.
Journal code: HMV. ISSN: 0021-9525.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 198503

AB The binding of platelets to components in the subendothelial matrix is an initial event in hemostasis and thrombosis. The glycoprotein components of the matrix are considered important in this interaction. Of these, **collagen** binds and activates platelets and induces their aggregation. In this study we demonstrate that substrate-bound laminin causes time- and concentration-dependent adherence of human platelets to the substrate. The binding of platelets to laminin was found to be similar in some respects, but different in others, to their binding to surfaces coated with fibronectin or **collagen**. The binding of platelets to laminin or fibronectin was not associated with their activation under conditions in which type I **collagen** activates the platelets as measured by [14C]serotonin secretion. Platelets bound to laminin and fibronectin differed in their appearance; they remained rounded on laminin whereas they flattened completely on fibronectin. Binding of platelets to fibronectin, but not laminin, is inhibited by a recently described **peptide** (Pierschbacher, M., and E. Ruoslahti, 1984, Nature (Lond.), 309:30-33) containing the cell-attachment tetrapeptide sequence of fibronectin, which suggests that separate receptors exist for laminin and fibronectin. These studies establish laminin as a platelet-binding **protein** and suggest that laminin can contribute to the **adhesiveness** of exposed **tissue** matrices to platelets. Since laminin and fibronectin do not activate platelets, whereas **collagen** does, and laminin differs from fibronectin in that it does not induce spreading of the attached platelets, all three **proteins** appear to confer different signals to the platelets. Some of these may be related to platelet functions other than those necessary for the formation of a hemostatic plug.

Searcher : Shears 308-4994

L20 ANSWER 37 OF 42 BIOSIS COPYRIGHT 1999 BIOSIS
ACCESSION NUMBER: 1984:304434 BIOSIS
DOCUMENT NUMBER: BA78:40914
TITLE: A QUANTITATIVE METHOD FOR STUDYING PLATELET ADHESION TO **COLLAGEN**.
AUTHOR(S): AIHARA M; COOPER H A; WAGNER R H
CORPORATE SOURCE: DEP. PATHOL., UNIV. N.C., 705 BRINKHOUS-BULLITT BUILD. 228-H, CHAPEL HILL, N.C. 27514.
SOURCE: J LAB CLIN MED, (1984) 103 (5), 758-767.
CODEN: JLCMAK. ISSN: 0022-2143.
FILE SEGMENT: BA; OLD
LANGUAGE: English
AB A simple turbidimetric method is described that permits quantitation of both the number and the rate at which human fixed washed platelets adhere to fibrillar **collagen** in suspension. Fixed washed platelets were mixed with buffer or test sample in an aggregometer cuvette. **Collagen** was added and the change in light transmission was recorded at 37.degree. C. Percent **adhesion** was obtained from the maximum change in light transmission within 5 min and the **adhesion** rate was calculated from the initial slope of the **adhesion** curve. In this system, the percent **adhesion** was optimal at ionic strengths of 0.1 to 0.15 in a pH range of 7.0 to 8.0. Percent **adhesion** could be increased either by lowering the platelet number or by increasing the **collagen** concentration. No adherence of fixed washed platelets to heat-denatured **collagen** or Cytodex 3 beads was observed. **Adhesion** rate increased with greater stirring speed, decreased with increasing concentrations of bovine serum **albumin** or normal human plasma, but the percent **adhesion** remained relatively constant. The rate of **adhesion** in 20% normal human plasma was greater than that in 1 to 4% bovine serum **albumin** buffer. Apparently, normal plasma contains some factor(s) that can overcome the inhibitory effect of **protein** on the rate of **adhesion** of fixed washed platelets to fibrillar **collagen**. [Platelet thrombi are found at the site of vascular injury. Platelets interact with injured vessel walls and exposed connective **tissue** to produce a plug that controls the hemostatic defect. **Collagen** is the factor in connective **tissue** responsible for this interaction.]

L20 ANSWER 38 OF 42 MEDLINE DUPLICATE 12
ACCESSION NUMBER: 83135992 MEDLINE
DOCUMENT NUMBER: 83135992
TITLE: Multiple mechanisms of dissociated epidermal cell spreading.
AUTHOR: Stenn K S; Madri J A; Tinghitella T; Terranova V P
CONTRACT NUMBER: R01 HH 28373-01
Searcher : Shears 308-4994

SOURCE: JOURNAL OF CELL BIOLOGY, (1983 Jan) 96 (1) 63-7.
Journal code: HMV. ISSN: 0021-9525.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198306

AB To test the possibility that epidermal cells use a common basement membrane **protein** whenever they spread, in vitro experiments were conducted using trypsin-dissociated guinea pig epidermal cells and the following **proteins**: human serum, bovine serum **albumin**, serum fibronectin, Type IV **collagen**, laminin, and epibolin (a recently described serum glycoprotein which supports epidermal cell spreading; Stenn, K.S., 1981, Proc. Natl. Acad. Sci. U.S.A. 78:6907.). When the cells were added to media containing the specific **proteins**, all the tested **proteins**, except for serum **albumin**, supported cell spreading. Added to **protein**-coated substrates in defined media, the cells spread on fibronectin, epibolin, and laminin-Type IV **collagen**, but not on **albumin** or whole serum. In none of these experiments were the results qualitatively affected by the presence of cycloheximide. Antibodies to a specific **protein** blocked cell spreading on that **protein** but not on the other active **proteins**, e.g. whereas antibodies to epibolin blocked cell spreading on epibolin, they did not affect spreading on fibronectin, **collagen**, or laminin. In a second assay in which the cells were allowed to adhere to **tissue** culture plastic before the **protein**-containing medium was added, the cells spread only if the medium contained epibolin. Moreover, under these conditions the spreading activity of whole serum and plasma was neutralized by antiepibolin antibodies. These results support the conclusion that dissociated epidermal cells possess multiple spreading modes which depend, in part, on the **proteins** of the substrate, **proteins** of the medium, and the sequence of cell **adhesion** and **protein** exposure.

L20 ANSWER 39 OF 42 MEDLINE
ACCESSION NUMBER: 82040147 MEDLINE
DOCUMENT NUMBER: 82040147
TITLE: Plasma **proteins** and wound healing.
AUTHOR: Powanda M C; Moyer E D
CONTRACT NUMBER: GM 15768-09A1 (NIGMS)
SOURCE: SURGERY, GYNECOLOGY AND OBSTETRICS, (1981 Nov) 153 (5) 749-55. Ref: 105
Journal code: VBD. ISSN: 0039-6087.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
Searcher : Shears 308-4994

LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 198202
AB In response to injury, the concentrations of several plasma **proteins** are characteristically altered. In part, these changes reflect an essential contribution of many of these **proteins**, acting in concert, to the processes involved in wound healing. There is evidence that plasma **proteins** support **tissue** repair by metabolic as well as functional activity. Specifically, plasma **proteins** may directly facilitate wound healing by: provision of carbohydrates, lipids and **amino** acids in a usable form as biosynthetic precursors and energetic substrates; the transport of trace metal cofactors involved in various wound repair processes; **adhesion** of regenerating **tissue**; modulation of the rate of structural **protein** synthesis; alignment of **collagen** subunits; organization of cellular elements wound repair; prevention of autoimmune reactions; hormone transport and local modulation of hormonal effects; neutralization of the potentially toxic products of the inflammatory response and the inhibition of microbial invasion and colonization.

L20 ANSWER 40 OF 42 EMBASE COPYRIGHT 1999 ELSEVIER SCI. B.V.
ACCESSION NUMBER: 78073711 EMBASE
DOCUMENT NUMBER: 1978073711
TITLE: The role of abnormal hemorrheodynamics in the pathogenesis of diabetic retinopathy.
AUTHOR: Little H.L.
CORPORATE SOURCE: Palo Alto Med. Res. Found., Palo Alto, Calif., United States
SOURCE: Transactions of the American Ophthalmological Society, (1977) No. 74/- (573-636).
CODEN: TAOSAT
COUNTRY: United States
DOCUMENT TYPE: Journal
FILE SEGMENT: 012 Ophthalmology
003 Endocrinology
006 Internal Medicine
LANGUAGE: English
AB This paper reports the results of a multifaceted study whose main purpose was to identify the factors that play major roles in the development of diabetic retinopathy. To this end the study consisted of a simultaneous examination of data from 3 principal areas: (1) Direct clinical evaluation and examination of ocular states in vivo. (2) Rheological examination of blood. (3) Blood chemistry. By examining and analyzing the results from these 3 areas it has become evident that diabetic retinopathy is caused by abnormal red cell aggregation. This red cell aggregation has in turn been shown to be related to high levels of fibrinogen and alpha 2 globulins and low

levels of serum **albumin** while alpha 1, beta, and gamma globulins have been shown to have minimal changes. The mechanism for diabetic retinopathy development may be explained as follows. Evidence indicates that diabetic retinopathy occurs as a result of impaired oxygen transfer to the retina. This **tissue** is most susceptible to hypoxia because of its unique vascular anatomy and its high metabolic activity. Altered hemorrheodynamics in the microcirculation seem to play a major role in the production of focal ischemia and retinal hypoxia. Impaired carbohydrate metabolism with hyperglycemia stimulates release of growth hormone. This in turn activates hepatic synthesis of large plasma **proteins** including fibrinogen and alpha 2 globulins. These large plasma **proteins** bind red cells into aggregates that cause sludging in the microcirculation with increased resistance to flow. In the presence of endothelial damage, platelet **adhesion** to subendothelial **collagen** fibrils and platelet release of ADP might occur, increasing the red cell aggregate resistance to shear. Focal occlusions of the distal arterioles then occur. In areas of ischemia, there is endothelial and pericyte loss, but endothelial hyperplasia occurs in zones of hypoxia. In hypoxic zones at the margins of focal ischemia, microaneurysms and retinal neovascularization develop in association with micro and macrovascular shunts. **Protein** and lipid exudates from leakage of plasma and hemorrhage occur as a result of impaired capillary permeability. The sequence of events in diabetic retinopathy can possibly be aborted with rigid control of blood sugar levels which results in decreased production of growth hormone secretion accompanied by reduced **protein** synthesis with amelioration of red cell aggregation and improved hemorrheodynamics in the microcirculation.

L20 ANSWER 41 OF 42 MEDLINE DUPLICATE 13
ACCESSION NUMBER: 77165427 MEDLINE
DOCUMENT NUMBER: 77165427
TITLE: Sulphonated polystyrene as an optimal substratum for the adhesion and spreading of mesenchymal cells in monovalent and divalent saline solutions.
AUTHOR: Maroudas N G
SOURCE: JOURNAL OF CELLULAR PHYSIOLOGY, (1977 Mar) 90 (3) 511-9.
Journal code: HNB. ISSN: 0021-9541.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197708
AB Cell **adhesion** and spreading were studied on sulphonated polystyrene dishes in serum-free saline (Mn, Na, Cl, buffer) i.e., without an intervening **protein** layer. Spreading as a

function of surface charge density, SCD, peaked around 2-10 negative charges per square nanometer, corresponding to a monomolecular layer of sulphonate ions. At optimal SCD, macrophages, BHK-C13 and whole mouse embryo secondary cells all showed considerable spreading, even in monovalent saline-more so than on a conventional **tissue** -culture surface. But outside this narrow range of SCD, or on **protein**-coated surfaces, the divalent cation was indispensable. The biphasic effect of sulphonation on cell **adhesion** is consistent with the theory that a substratum need not be biochemically specific, provided it is physiochemically polar, rigid and dense. According to this theory, polystyrene of sub-optimal SCD would not be sufficiently polar, while supra-optimal sulphonation would produce a hydrogel surface, lacking in local rigidity and density, due to osmotic swelling. The principle of polymer exclusion, by a surface hydrogel layer, is also consistent with observations on the inhibitory effects of adsorbed **proteins**-viz., **albumin**, **collagen**, serum and cellular exudate, respectively-contrasted with the ready attachment of cells to a bare, optimally charged substratum, in this minimal in vitro system.

L20 ANSWER 42 OF 42 EMBASE COPYRIGHT 1999 ELSEVIER SCI. B.V.
ACCESSION NUMBER: 78153717 EMBASE
DOCUMENT NUMBER: 1978153717
TITLE: Role of abnormal blood rheology in the pathogenesis of diabetic retinopathy.
AUTHOR: Little H.L.; Sacks A.H.
CORPORATE SOURCE: Palo Alto Med. Res. Found., Palo Alto, Calif., United States
SOURCE: Transactions of the American Academy of Ophthalmology and Otolaryngology, (1977) 83/3 (I) (op522-534). CODEN: TAAOAF
COUNTRY: United States
DOCUMENT TYPE: Journal
FILE SEGMENT: 012 Ophthalmology
003 Endocrinology
005 General Pathology and Pathological Anatomy
LANGUAGE: English
AB This study consisted of a simultaneous examination of data from 3 principle areas: (1) direct clinical evaluation and examination of ocular states in vivo, (2) rheologic examination of blood and (3) blood chemistry. The results from these three areas indicate that diabetic retinopathy is caused by abnormal red cell aggregation. This red cell aggregation has in turn, been shown to be related to high levels of fibrinogen and .alpha.2-globulins and low levels of serum **albumin**, while .alpha.1-, .beta.-, and .gamma.-globulins have shown to have minimal changes. The mechanism for diabetic retinopathy development may be hypothesized as follows: Evidence indicates that diabetic retinopathy occurs as a result of

impaired oxygen transfer to the retina. This **tissue** is most susceptible to hypoxia because of its unique vascular anatomy and its high metabolic activity. Altered hemorheodynamics in the microcirculation seems to play a major role in the production of focal ischemia and retinal hypoxia. Impaired carbohydrate metabolism with hyperglycemia stimulates release of growth hormone. This, in turn, activates hepatic synthesis of large plasma **proteins** including fibrinogen and .alpha.2 globulins. These large plasma **proteins** bind red cells into aggregates that cause sludging in the microcirculation with increased resistance to flow. In the presence of endothelial damage, platelet **adhesion** to subendothelial **collagen** fibrils, and platelet release of adenosine diphosphate might occur, increasing the red cell aggregate resistance to shear. Focal occlusions of the distal arterioles then occur. In areas of ischemia, there is endothelial and pericyte loss, but endothelial hyperplasia occurs in zones of hypoxia. In hypoxic zones at the margins of focal ischemia, microaneurysms and retinal neovascularization develop in association with microvascular and macrovascular shunts. **Protein** and lipid exudates from leakage of plasma and hemorrhage occur as a result of impaired capillary permeability. The sequence of events in diabetic retinopathy can possibly be aborted by rigid control of blood sugar levels, which results in decreased production of growth hormone secretion accompanied by reduced **protein** synthesis, amelioration of red cell aggregation, and improved hemorheodynamics in the microcirculation.

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FILE 'HOME' ENTERED AT 10:01:43 ON 08 DEC 1999